XM-752EQX

SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
E Model

SPECIFICATIONS

AUDIO POWER SPECIFICATIONS (US, Canadian model)

POWER OUTPUT AND TOTAL HARMONIC DISTORTION
75 watts per channel minimum continuous average power into 4 ohms, both channels driven from 20 Hz to 20 kHz with no more than 0.04% total harmonic distortion per Car Audio Ad Hoc Committee standards.

Other Specifications

Circuit system	OTL (output transformerless) circuit Pulse power supply
Inputs	RCA pin jacks High level input connector
Outputs	Speaker terminals Through out pin jacks
Speaker impedance	2 – 8 Ω (stereo) 4 – 8 Ω (when used as a bridging amplifier)
Maximum outputs	150 watts × 2 (at 4 Ω) 400 watts (monaural, at 4 Ω)
Rated outputs (supply voltage at 14.4 V)	
	75 watts per channel (20 Hz – 20 kHz, 0.04% THD, at 4 Ω) 100 watts per channel (20 Hz – 20 kHz, 0.1% THD, at 2 Ω) 200 watts (monaural) (20 Hz – 20 kHz, 0.1% THD, at 4 Ω)
Frequency response	5 Hz – 100 kHz ($^{+0}_{-3}$ dB)
Harmonic distortion	0.005% or less (at 1 kHz, 4 Ω)
Input level adjustment range	
	0.2 – 4.0 V (RCA pin jacks) 0.4 – 8.0 V (High level input)
High-pass filter	50 – 200 Hz, –12 dB/oct
Low-pass filter	50 – 200 Hz, –12 dB/oct
Equalizer	50 Hz, 200 Hz, 800 Hz, 3.2 kHz, 12.8 kHz ±12 dB
Power requirements	12 V DC car battery (negative ground)
Power supply voltage	10.5 – 16 V
Current drain	At rated output: 20 A Remote input: 1.5 mA
Dimensions	Approx. 260 × 55 × 220 mm (10 1/4 × 2 1/4 × 8 3/4 in.) (l/h/p) not incl. projecting parts and controls
Mass	Approx. 2.2 kg (4 lb. 14 oz.) not incl. accessories
Supplied accessories	Mounting screws (4), Terminal cap (1)

Design and specifications are subject to change without notice.

STEREO POWER AMPLIFIER

MICROFILM

SONY®

TABLE OF CONTENTS

1. GENERAL

Location and Function of Controls 3
Connections 3

2. DISASSEMBLY

2-1. Bottom Plate 6
2-2. Panel (A) 6
2-3. Panel (B) 7
2-4. AMP Board 7
2-5. Control Panel Block 8

3. DIAGRAMS

3-1. Block Diagram 9
3-2. Printed Wiring Board –AMP Section– 11
3-3. Schematic Diagram –AMP Section– 13
3-4. Schematic Diagram –PRE Section– 15
3-5. Printed Wiring Board –PRE Section– 15
3-6. Schematic Diagram –EQ Section– 17
3-7. Printed Wiring Board –EQ Section– 17
3-8. Printed Wiring Board –IND Section– 19
3-9. Schematic Diagram –IND Section– 20
3-10. Printed Wiring Board –LED Section– 21
3-11. Schematic Diagram –LED Section– 22

4. EXPLODED VIEWS

4-1. Heat Sink Section 24
4-2. Control Panel Section 25

5. ELECTRICAL PARTS LIST 26

Notes on Chip Component Replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

SECTION 1
GENERAL

This section is extracted from instruction manual.

Location and Function of Controls

1 POWER/PROTECTOR indicator
- OVER CURRENT lights up green during normal operation. The color will change from green to red when receiving a powerful signal.
- OFF SET lights up green during normal operation. The color will change from green to red when the voltage going out to the speaker terminal or the pin jack is too high .
- THERMAL lights up green during normal operation. The color will change from green to red when the temperature rises to an unsafe level. The color will return to green when the temperature returns to normal.

2 Power level indicator
Indicates the output levels of both the left and right sides. The scale is calibrated for use with 4 ohms speakers.

3 LEVEL adjustment control
The input level can be adjusted with this control when using source equipment made by other manufacturers. Turn it to MAX when the output level of the car audio seems low. To reduce noise, turn the LEVEL control (gain) of the amplifer to MIN and the volume of the car audio up.

4 DIRECT switch
When the DIRECT switch is set to ON, the signal does not go through the low-pass filter, high-pass filter and equalizer circuit.

5 EQUALIZER level control
You can change the settings of the five band (50 Hz, 200 Hz, 800 Hz, 3.2 kHz, 12.8 kHz) equalizer.

6 Cut-off frequency adjustment control
Sets the cut-off frequency (50–200 Hz) for the low-pass or high-pass filters.

7 FILTER selector switch
When the switch is in the LPF position, the filter is set to low-pass. When in the HPF position, the filter is set to high-pass. When the DIRECT switch is set to ON, these filters do not work.

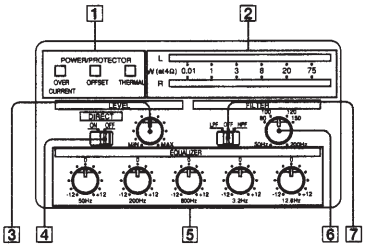
Switch settings for each system configuration
(Change the switch positions according to the configuration.)

System (refer to "Connections")		DIRECT	FILTER	EQ
• 2-speaker system • As a Monaural Amplifier • Dual Mode System		ON	—	—
		OFF	OFF	*
As the Monaural Amplifier for a Subwoofer		OFF	LPF	*
2-way system	Full range speakers	OFF	HPF	*
	Sub woofers	OFF	LPF	*

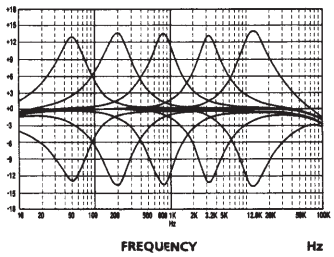
** desirable level*

Note

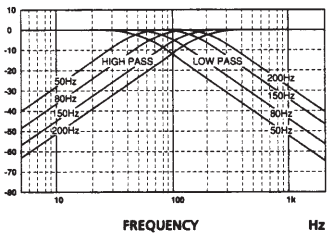
If you do not use the low-pass filter, high-pass filter and equalizer circuit, set the DIRECT switch to ON for more enjoyable high quality sound.



Equalizer/Egaliseur



Cut-off frequency/Fréquence de coupure



Emplacement et fonction des commandes

1 Indicateur POWER/PROTECTOR
- OVER CURRENT s'allume en vert en cours de fonctionnement normal. La couleur passe du vert au rouge lors de la réception d'un signal puissant.
- OFF SET s'allume en vert en cours de fonctionnement normal. La couleur passe du vert au rouge lorsque la tension transmise via la borne de haut-parleur ou la prise Pin est trop élevée.
- THERMAL s'allume en vert en cours de fonctionnement normal. La couleur passe du vert au rouge lorsque la température dépasse le niveau de sécurité. La couleur repasse au vert dès que la température est revenue à un niveau normal.

2 Indicateur de niveau de puissance
Indique les niveaux de sortie des côtés gauche et droit. L'échelle est graduée pour une utilisation avec des haut-parleurs de 4 ohms.

3 Commande de réglage LEVEL
Le niveau d'entrée peut se régler avec cette commande lors de l'utilisation d'équipements source d'autres fabricants. Mettez-le sur MAX lorsque le niveau de sortie de l'installation audio paraît faible.
Pour réduire les parasites, tournez la commande LEVEL (gain) de l'amplificateur sur MIN et augmentez le volume sur l'autoradio.

4 Commutateur DIRECT
Lorsque le commutateur DIRECT est réglé sur ON, le signal ne passe pas par le filtre passe-bas, le filtre passe-haut et le circuit d'égalisation.

5 Commande de niveau EQUALIZER
Vous pouvez changer les réglages de l'égaliseur à cinq bandes (50 Hz, 200 Hz, 800 Hz, 3.2 kHz, 12.8 kHz).

6 Commandes de réglage de la fréquence de coupure
Règle la fréquence de coupure (50–200 Hz) des filtres passe-bas ou passe-haut.

7 Sélecteur FILTER
Lorsque le commutateur est en position LPF, le filtre est mis sur passe-bas. Lorsqu'il est en position HPF, le filtre est mis sur passe-haut. Lorsque le commutateur DIRECT est activé, ces filtres ne fonctionnent pas.

Réglage des commutateurs pour chaque configuration de système
(Changez les positions des commutateurs en fonction de la configuration.)

Système (voir "Connexions")		DIRECT	FILTER	EQ
• Système à 2 haut-parleurs • Comme amplificateur monaural • Double mode de connexion		ON	—	—
		OFF	OFF	*
Comme amplificateur monaural pour un haut-parleur d'extrêmes graves		OFF	LPF	*
Systèmes à 2 voies	Haut-parleurs à large bande	OFF	HPF	*
	Haut-parleurs d'extrêmes graves	OFF	LPF	*

** niveau voulu*

Remarque

Si vous n'utilisez pas le filtre passe-bas, le filtre passe-haut et le circuit d'égalisation, réglez le commutateur DIRECT sur ON afin d'optimiser la qualité sonore.

Connections

Caution

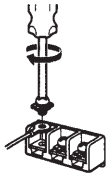
- Before making any connections, disconnect the ground terminal of the car battery to avoid short circuits.
- Be sure to use speakers with an adequate power rating. If you use small capacity speakers, they may be damaged.
- Do not connect the ⊖ terminal of the speaker system to the car chassis, and do not connect the ⊖ terminal of the right speaker with that of the left speaker.
- Install the input and output cords away from the power supply lead as running them close together can generate some interference noise.
- This unit is a high-power amplifier. Therefore, it may not perform to its full potential if used with the speaker cords supplied with the car.
- If your car is equipped with a computer system for navigation or for some other purpose, do not to remove the ground wire from the car battery. If you disconnect the wire, the computer memory may be erased. To avoid short circuits when making connections, disconnect the +12 V power supply lead until all the other leads have been connected.

Make the terminal connections as illustrated below.

Note

When you tighten the screw, be careful not to apply too much torque as doing so may damage the screw.*

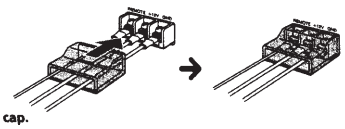
** The torque value should be less than 1 N•m.*



Remarque

Ne serrez pas la vis selon un couple trop fort car vous pourriez l'endommager.*

** La valeur du couple de serrage doit être inférieure à 1 N•m.*



Pass the leads through the cap, connect the leads, then cover the terminals with the cap.

Faites passer les fils par le cache, raccordez les fils et recouvrez les bornes avec le cache.

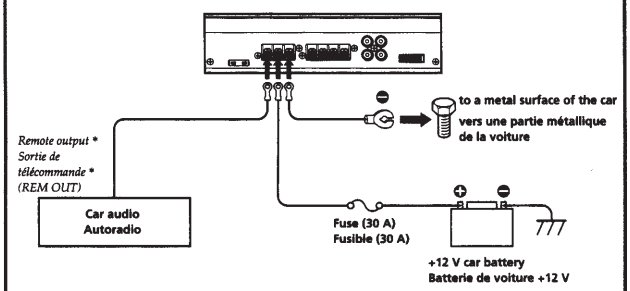
Connexions

Attention

- Avant d'effectuer les connexions, débranchez la borne de masse de la batterie de voiture pour éviter tout court-circuit.
- Veillez à utiliser des haut-parleurs de puissance adéquate. Si vous utilisez des haut-parleurs de faible capacité, ils risquent d'être endommagés.
- Ne raccordez pas la borne ⊖ du système de haut-parleurs à la carrosserie de la voiture ni la borne ⊖ du haut-parleur droit avec celle du haut-parleur gauche.
- Eloignez les câbles d'entrée et de sortie du câble d'alimentation pour éviter les interférences.
- Cet appareil est un amplificateur de haute puissance. Il est donc possible qu'il ne fonctionne pas à son potentiel maximum s'il est employé avec les cordons de haut-parleur montés dans la voiture.
- Si votre voiture est équipée d'un ordinateur de bord de navigation ou autre, ne débranchez pas le fil de masse de la batterie. Si vous débranchez ce fil, il se peut que la mémoire de l'ordinateur s'efface complètement. Pour éviter les courts-circuits lorsque vous établissez les connexions, débranchez le fil d'alimentation + 12 V tant que tous les autres fils n'ont pas été raccordés.

Effectuez les connexions de la manière illustrée ci-dessous.

Power Connection Leads
Câbles d'alimentation



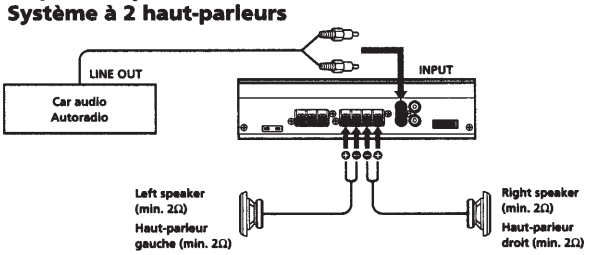
** If you have the factory original or some other car audio without a remote output on the amplifier, connect the remote input terminal (REMOTE) to the accessory power supply.*

** Si vous disposez du modèle d'origine ou d'un autre autoradio dont l'amplificateur ne comporte pas de sortie de télécommande, raccordez la borne d'entrée de télécommande (REMOTE) à la prise d'alimentation accessoires.*

Notes on the power supply
- *Connect the +12 V power supply lead only after all the other leads have been connected.*
- ***Be sure to connect the ground lead of the unit securely to a metal surface of the car. A loose connection may cause the amplifier to malfunction.***
- *Be sure to connect the remote control lead of the car audio to the remote terminal.*
- *When using a car audio without a remote output on the amplifier, connect the remote input terminal (REMOTE) to the accessory power supply.*
- *Use the power supply lead with a fuse attached (30 A).*
- *Place the fuse in the power supply lead as close as possible to the car battery.*
- *Make sure that the leads to be connected to the **+12 V** and **GND** terminals of this unit respectively must be larger than 10-Gauge (AWG-10) or with the sectional area of more than 5 mm².*
- *When using the optional RC-46 power amplifier connecting cord, consult that manual for proper use.*

Remarques sur l'alimentation électrique
- *Raccordez le câble d'alimentation +12 V uniquement après avoir réalisé toutes les autres connexions.*
- ***Raccordez correctement le fil de masse de l'appareil à un point métallique de la voiture. Une connexion lâche risque de provoquer un dysfonctionnement de l'amplificateur.***
- *Veillez à raccorder le fil de télécommande de l'autoradio à la borne de télécommande.*
- *Si vous utilisez un autoradio dont l'amplificateur ne comporte pas de sortie de télécommande, raccordez la borne d'entrée de la télécommande (REMOTE) à la prise d'alimentation accessoires.*
- *Utilisez un câble d'alimentation muni d'un fusible (30 A).*
- *Fixez le câble d'alimentation le plus près possible de la batterie de voiture.*
- *Vous devez raccorder des câbles de calibre supérieurs à 10 (AWG-10) ou d'une section supérieure à 5 mm² aux bornes **+12V** et **GND**.*
- *Lorsque vous utilisez le cordon de raccordement pour amplificateur RC-46 en option, consultez le manuel pour une utilisation correcte.*

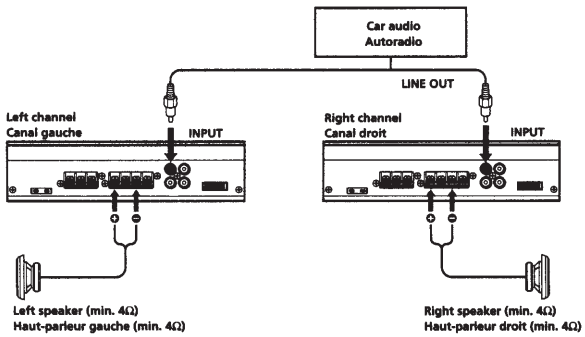
2-Speaker System
Système à 2 haut-parleurs



For details on the settings of switches and controls, refer to "Location and Function of Controls."

Pour plus de détails sur les réglages des commutateurs et commandes, reportez-vous à "Emplacement et fonction des commandes".

As a Monaural Amplifier
Comme amplificateur monaural



For details on the settings of switches and controls, refer to "Location and Function of Controls."

Note

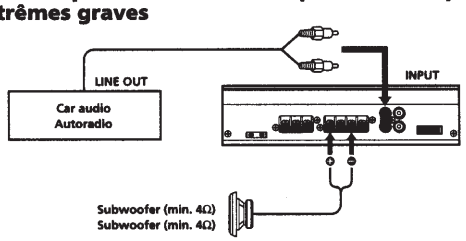
Make sure that the line output from the car audio is connected to the jack marked "L (MONO)" on the unit.

Pour plus de détails sur les réglages des commutateurs et commandes, reportez-vous à "Emplacement et fonction des commandes".

Remarque

Vérifiez que la sortie de ligne de l'autoradio est raccordée à la prise portant l'indication "L (MONO)" sur l'appareil.

As the Monaural Amplifier for a Subwoofer
Comme amplificateur monaural pour un haut-parleur d'extrêmes graves



For details on the settings of switches and controls, refer to "Location and Function of Controls."

Note

If you wish to use a subwoofer as a monaural speaker, connect the speaker as illustrated above. The output signals to the subwoofer will be the combination of the both right and left output signals.

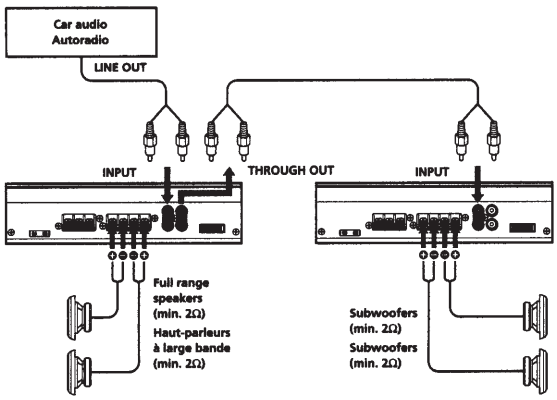
Pour plus de détails sur les réglages des commutateurs et commandes, reportez-vous à "Emplacement et fonction des commandes".

Remarque

Si vous désirez utiliser un haut-parleur d'extrêmes graves comme haut-parleur monaural, raccordez le haut-parleur comme illustré ci-dessus. Les signaux de sortie vers le haut-parleur d'extrêmes graves seront une combinaison des signaux de sortie droit et gauche.

2-way System
Système 2 voies

Two output channels
Deux canaux de sortie



Use the THROUGH OUT terminal when you install more amplifiers. In this case, the signals are output as they are input. (EQUALIZER, HPF, and LPF do not work.)

Notes

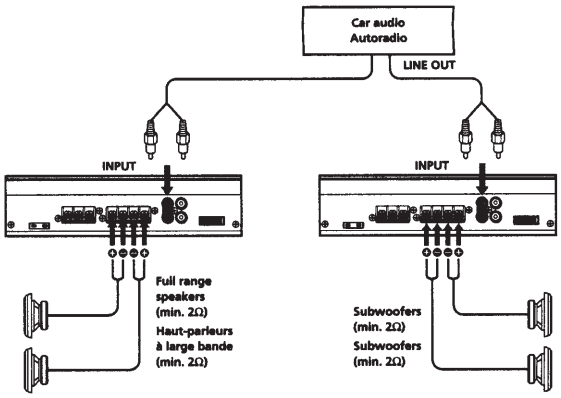
- *A maximum of 3 amplifiers can be connected to the THROUGH OUT terminal. If you connect more than 3 amplifiers, it may cause problems such as sound dropout.*
- *High level input connection cannot use THROUGH OUT.*

Utilisez la borne THROUGH OUT lorsque vous installez plusieurs amplificateurs. Dans ce cas, les signaux sont sortis comme ils sont entrés. (EQUALIZER, HPF et LPF sont inopérants.)

Remarques

- *Vous pouvez raccorder 3 amplificateurs au maximum à la borne THROUGH OUT. Si vous raccordez plus de 3 amplificateurs, des problèmes peuvent survenir comme des pertes de son.*
- *Une connexion à haut niveau d'entrée ne peut utiliser THROUGH OUT.*

Four output channels
Quatre canaux de sortie



For details on the settings of switches and controls, refer to "Location and Function of Controls."

Note

In this system, the volume of the subwoofers will be controlled by the car audio fader control.

Pour plus de détails sur les réglages des commutateurs et commandes, reportez-vous à "Emplacement et fonction des commandes".

Remarque

Dans ce système, le volume des haut-parleurs d'extrêmes graves est contrôlé par la commande de balance avant/arrière de l'autoradio.

Dual Mode System (With a Bridged Subwoofer)
Double mode de connexion (avec un haut-parleur d'extrêmes graves en pont)

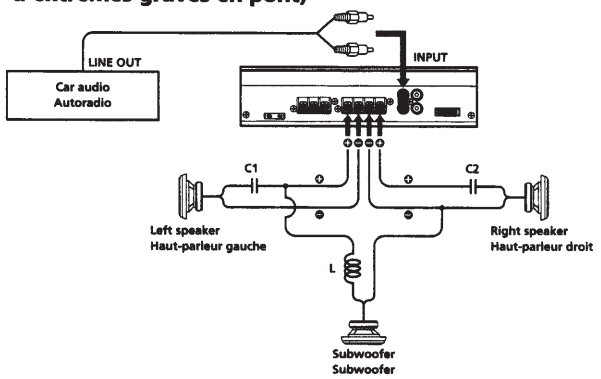


Table of crossover values for 6 dB/octave (4 ohms)

Crossover Frequency unit: Hz	L (coil)* unit: mH	C1/C2 (capacitor)* unit: µF
50	12.7	800
80	8.2	500
100	6.2	400
130	4.7	300
150	4.2	270
200	3.3	200
260	2.4	150
400	1.6	100
600	1.0	68
800	0.8	50
1000	0.6	39

* (not supplied)

Tableau des valeurs de recoupement pour 6 dB/octave (4 ohms)

Fréquence de recoupement unité: Hz	L (bobine)* unité:mH	C1/C2 (condensateur)* unité: µF
50	12,7	800
80	8,2	500
100	6,2	400
130	4,7	300
150	4,2	270
200	3,3	200
260	2,4	150
400	1,6	100
600	1,0	68
800	0,8	50
1000	0,6	39

* (non fourni)

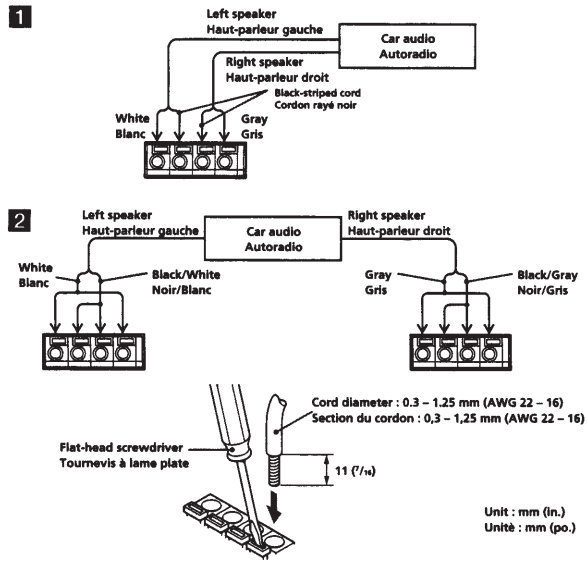
Notes

- *When using passive crossover networks in a multi-speaker system, make sure that the speaker system's impedance is not lower than those suitable for this unit.*
- *When installing a 12 decibel/octave system, where both a choke and capacitor are used in series to form a circuit, be sure to connect the speakers. When neither the ⊕ or ⊖ terminals of the speakers are connected, the impedance in the resonance area will decrease dramatically resulting in a short-circuit-like situation causing the amplifier to become abnormally hot or to malfunction.*

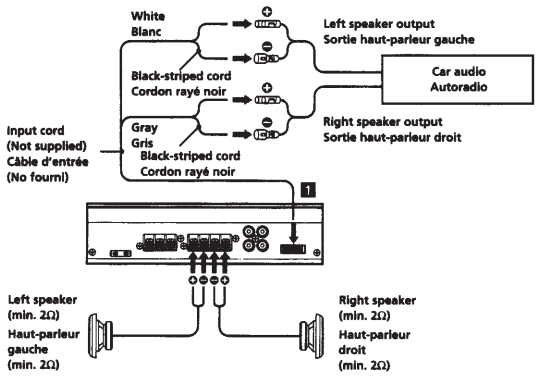
Remarques

- *Si vous utilisez des circuits de recoupement de fréquence passifs dans un système à plusieurs haut-parleurs, assurez-vous que l'impédance du système n'est pas inférieure à celle prévue pour l'appareil.*
- *Lorsque vous installez un système à 12 décibels/octaves où la bobine d'arrêt et le condensateur sont utilisés en série pour former un circuit, raccordez les haut-parleurs. Si vous ne raccordez ni la borne ⊕ ou ⊖ des haut-parleurs, l'impédance dans la zone de résonance sera considérablement réduite, ce qui entraînera une situation comparable à un court-circuit et, partant, un échauffement anormal ou un dysfonctionnement de l'amplificateur.*

Direct speaker cord connection
Raccordement direct du cordon de haut-parleur



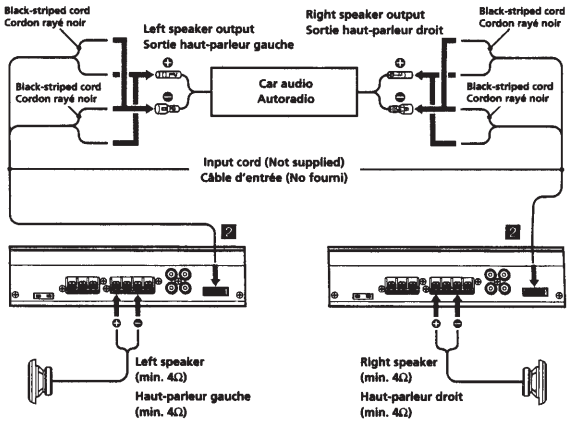
High Level Input Connection (2-Speaker System)
Connexion d'entrée à haut niveau
(Système à 2 haut-parleurs)



For details on the settings of switches and controls, refer to "Location and Function of Controls."

Pour plus de détails sur les réglages des commutateurs et commandes, reportez-vous à "Emplacement et fonction des commandes".

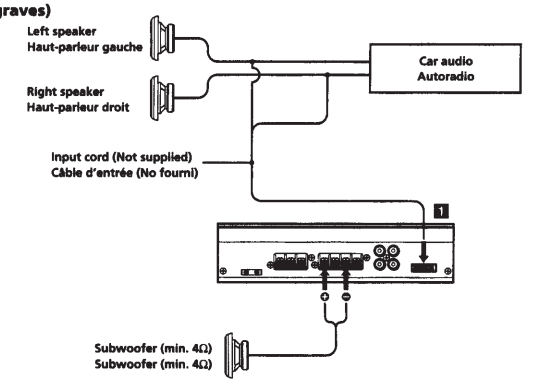
High Level Input Connection (As a Monaural Amplifier)
Connexion d'entrée à haut niveau
(Comme amplificateur monaural)



For details on the settings of switches and controls, refer to "Location and Function of Controls."

Pour plus de détails sur les réglages des commutateurs et commandes, reportez-vous à "Emplacement et fonction des commandes".

High Level Input Connection
(As a Monaural Amplifier for a Subwoofer)
Connexion d'entrée à haut niveau
(Comme amplificateur monaural pour un haut-parleur d'extrêmes graves)



For details on the settings of switches and controls, refer to "Location and Function of Controls."

Note

If you wish to use a subwoofer as a monaural speaker, connect the speaker as illustrated above. The output signals to the subwoofer will be the combination of both the right and left output signals.

Pour plus de détails sur les réglages des commutateurs et commandes, reportez-vous à "Emplacement et fonction des commandes".

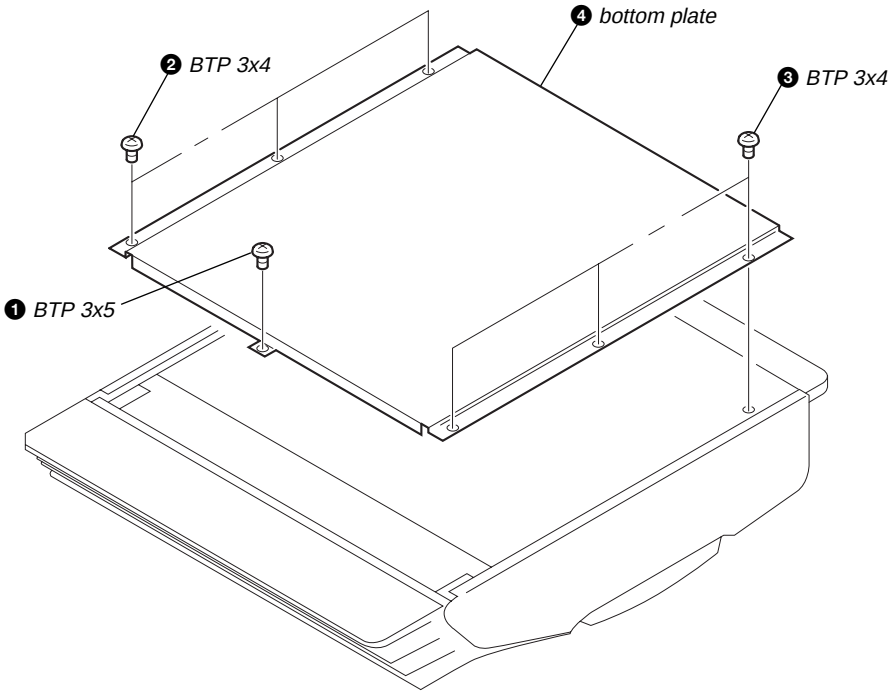
Remarque

Si vous désirez utiliser un haut-parleur d'extrêmes graves comme haut-parleur monaural, raccordez le haut-parleur comme illustré ci-dessus. Les signaux de sortie vers le haut-parleur d'extrêmes graves seront une combinaison des signaux de sortie droit et gauche.

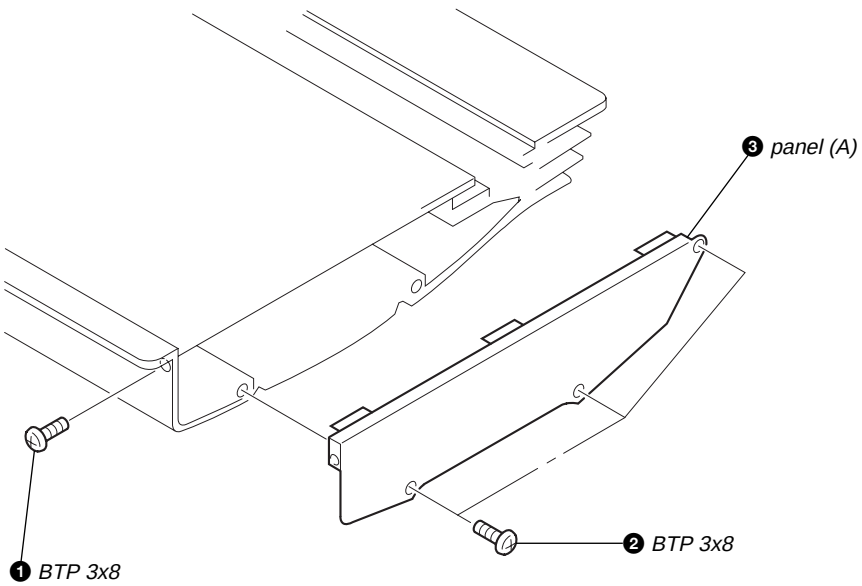
SECTION 2
DISASSEMBLY

Note : Follow the disassembly procedure in the numerical order given.

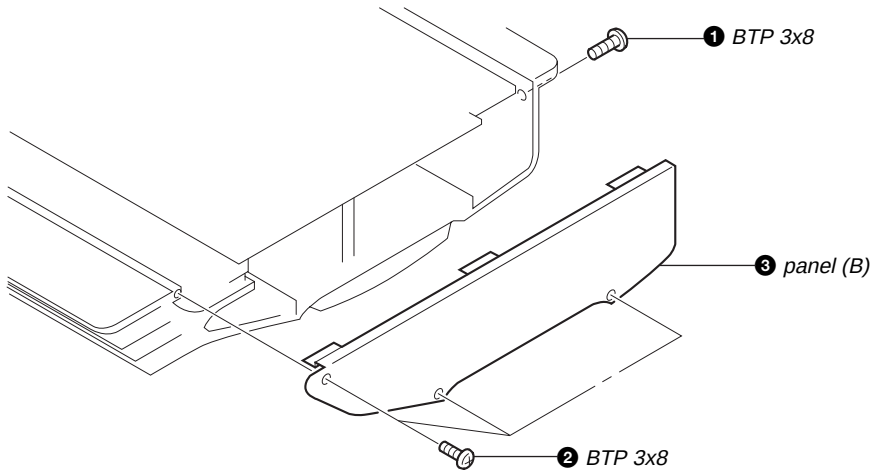
2-1. BOTTOM PLATE



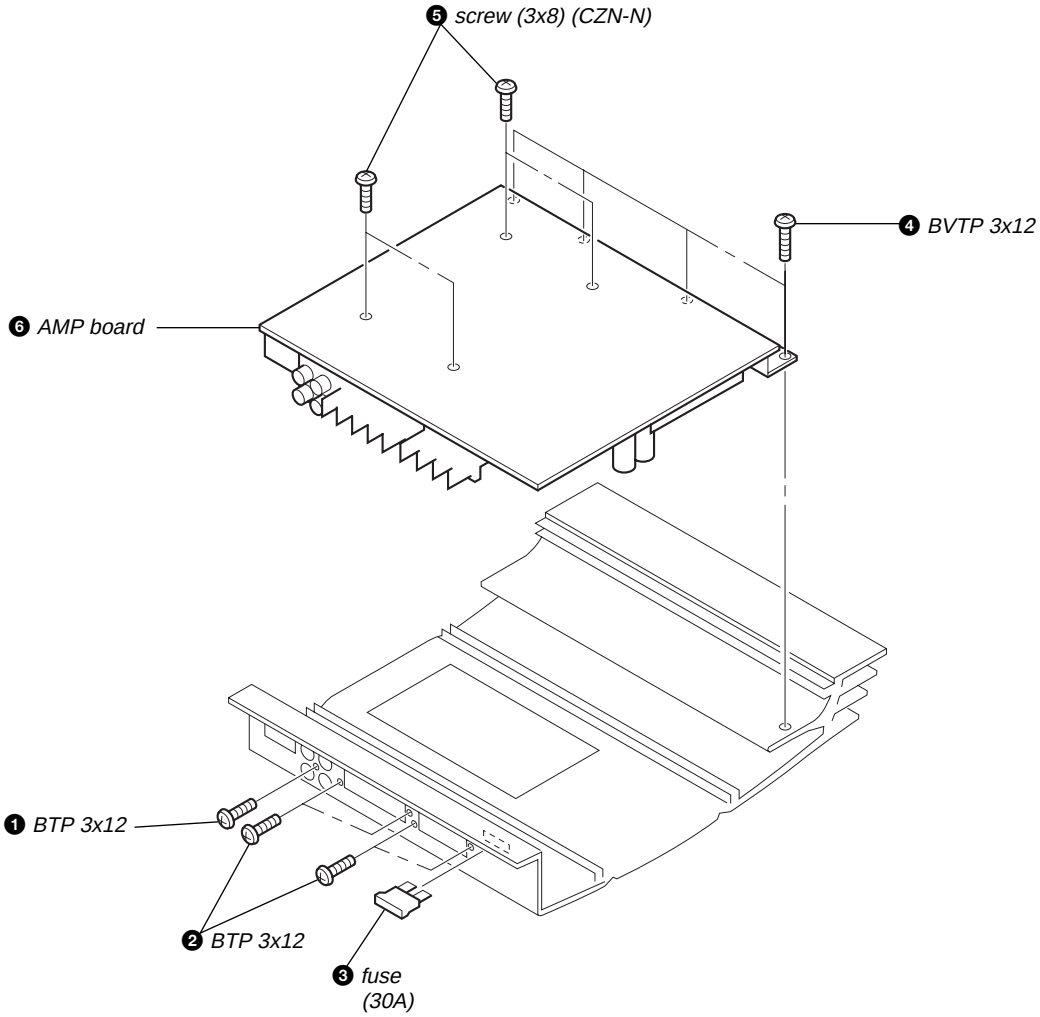
2-2. PANEL (A)



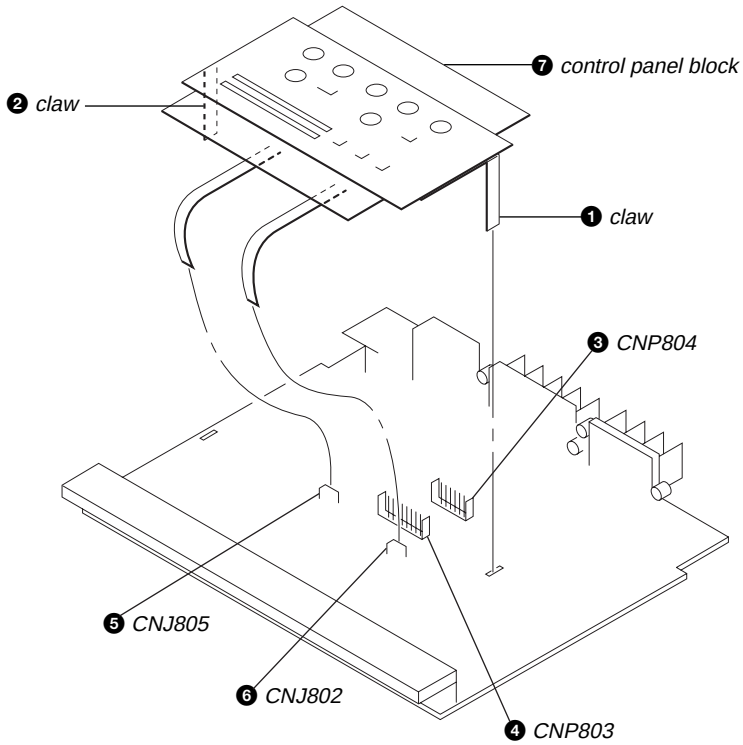
2-3. PANEL (B)



2-4. AMP BOARD

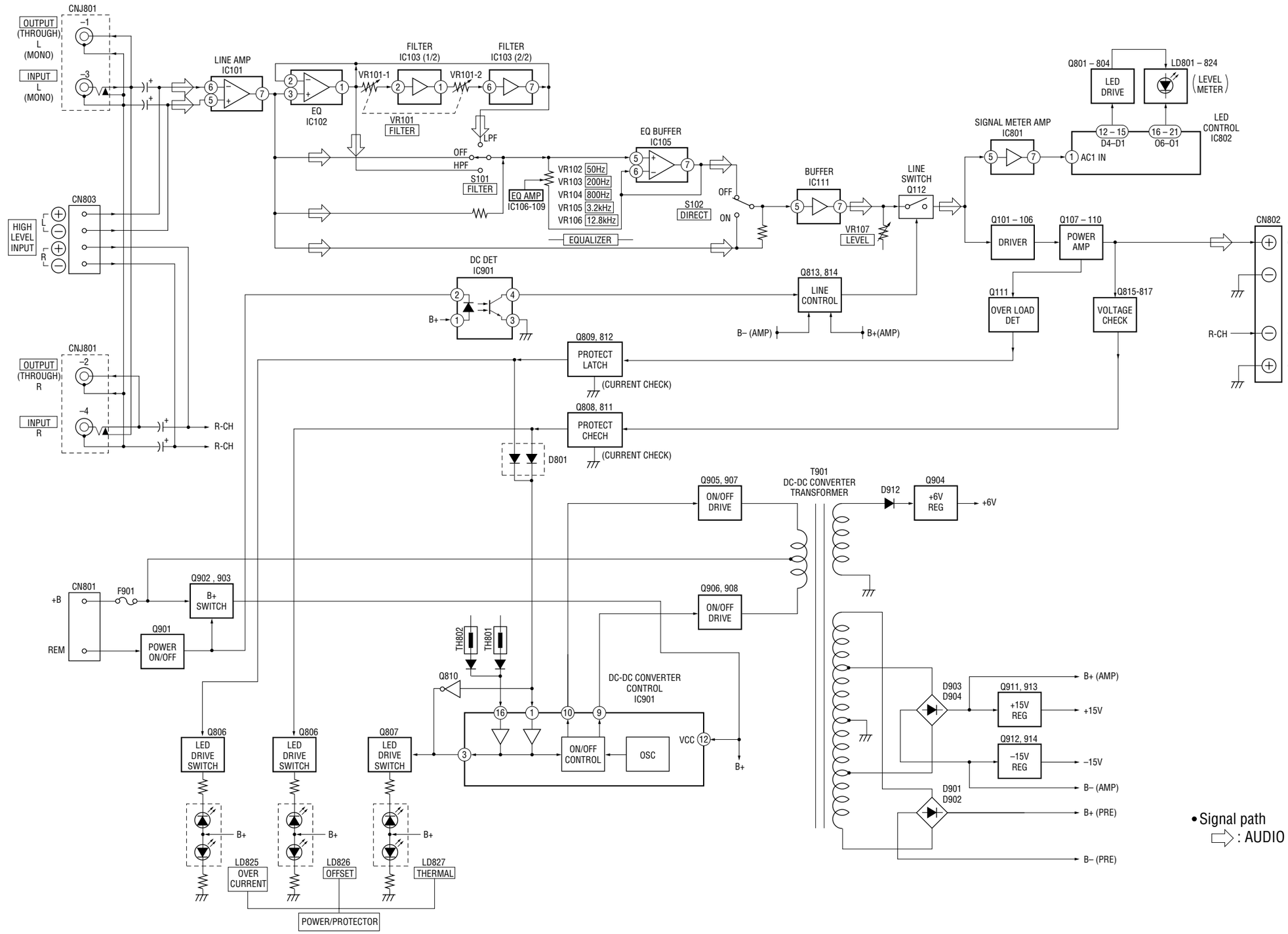


2-5. CONTROL PANEL BLOCK



SECTION 3
DIAGRAMS

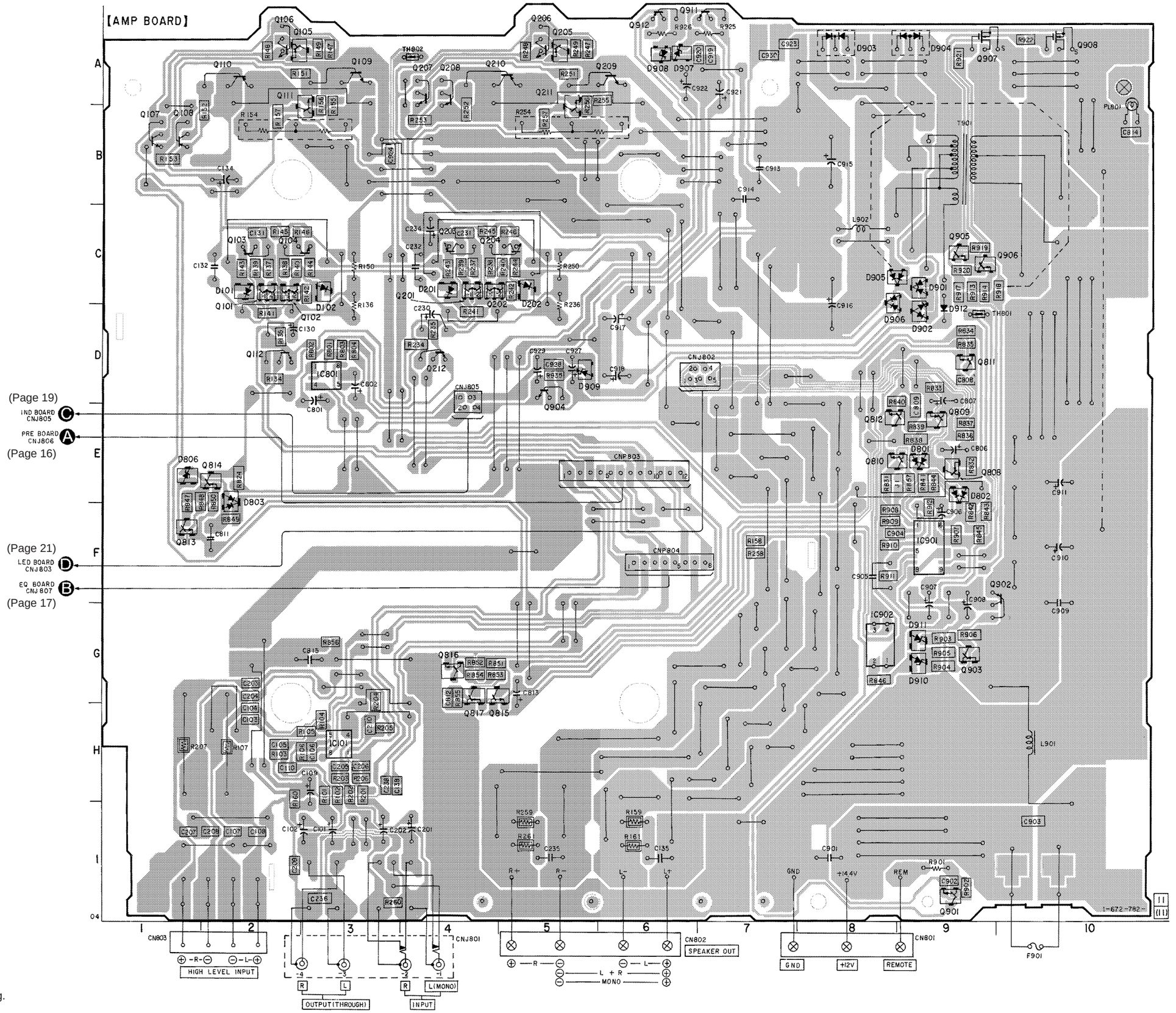
3-1. BLOCK DIAGRAM



3-2. PRINTED WIRING BOARD — AMP SECTION —

- **Semiconductor Location**

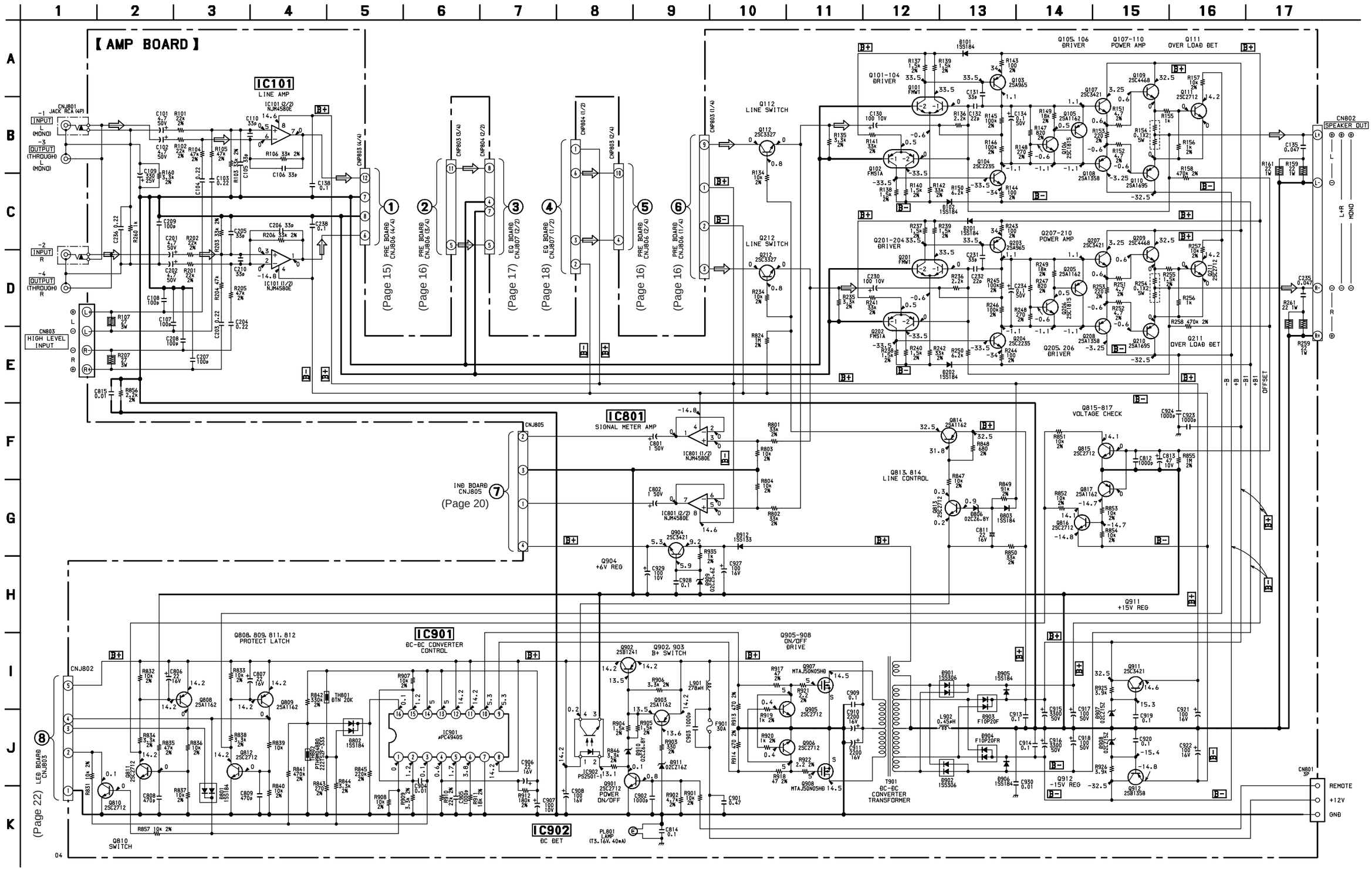
Ref. No.	Location
D101	C-2
D102	D-3
D201	C-4
D202	D-5
D801	E-9
D802	F-9
D803	F-2
D806	E-1
D901	C-9
D902	D-9
D903	A-8
D904	A-9
D905	C-8
D906	D-8
D907	A-6
D908	A-6
D909	D-5
D910	G-9
D911	G-9
D912	D-9
IC101	H-3
IC801	D-3
IC901	F-9
IC902	G-8
Q101	D-2
Q102	C-2
Q103	C-2
Q104	C-3
Q105	A-3
Q106	A-2
Q107	B-1
Q108	B-1
Q109	A-3
Q110	A-2
Q111	A-2
Q112	D-2
Q201	C-4
Q202	C-4
Q203	C-4
Q204	C-4
Q205	A-5
Q206	A-5
Q207	A-4
Q208	A-4
Q209	A-6
Q210	A-4
Q211	A-5
Q212	D-4
Q808	E-9
Q809	E-9
Q810	E-8
Q811	D-9
Q812	E-8
Q813	F-1
Q814	E-2
Q815	H-4
Q816	G-4
Q817	H-4
Q901	I-9
Q902	F-10
Q903	G-9
Q904	E-5
Q905	C-9
Q906	C-10
Q907	A-9
Q908	A-10
Q911	A-6
Q912	A-6



Note:

- ——o—— : parts extracted from the component side.
- ▒▒▒▒ : Pattern from the side which enables seeing.

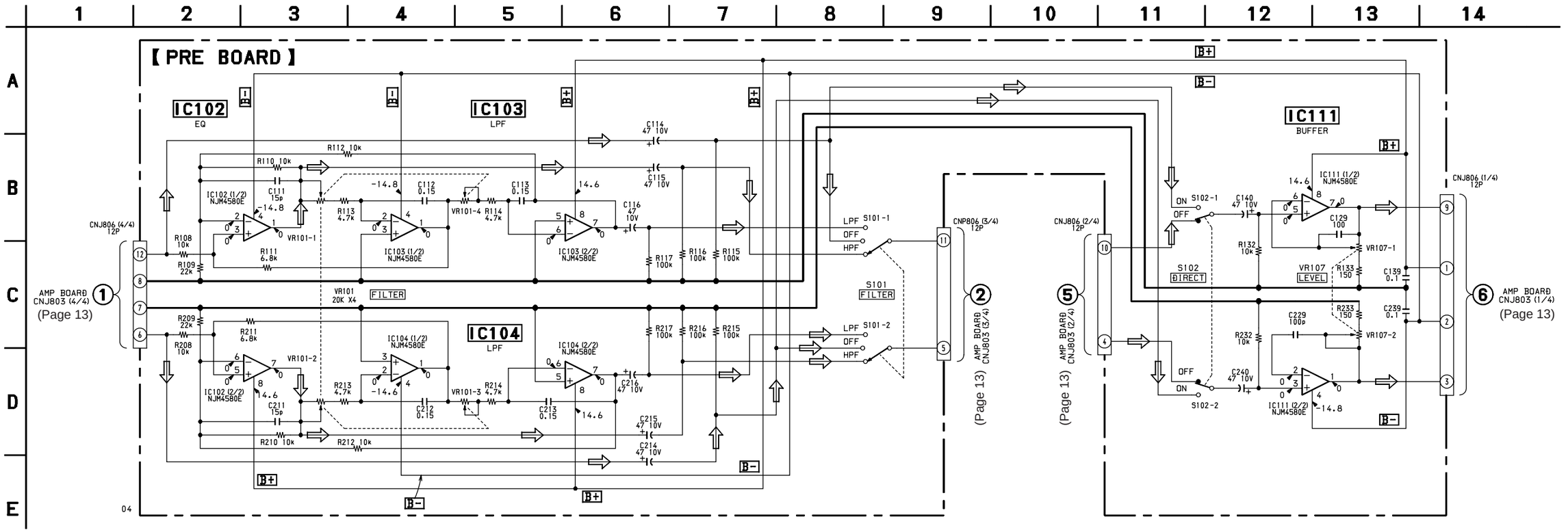
3-3. SCHEMATIC DIAGRAM — AMP SECTION — • Refer to page 23 for IC Block Diagrams.



Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- % : indicates tolerance.
- : nonflammable resistor.
- B+ : B+ Line.
- B– : B– Line.
- Power voltage is dc 14.4V and fed with regulated dc power supply from +12V and REMOTE terminals.
- Voltage is dc with respect to ground under no-signal condition.
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : AUDIO

3-4. SCHEMATIC DIAGRAM — PRE SECTION —



Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- % : indicates tolerance.
- : nonflammable resistor.
- B + : B+ Line.
- B − : B– Line.
- Power voltage is dc 14.4V and fed with regulated dc power supply from +12V and REMOTE terminals.
- Voltage is dc with respect to ground under no-signal condition.
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : AUDIO

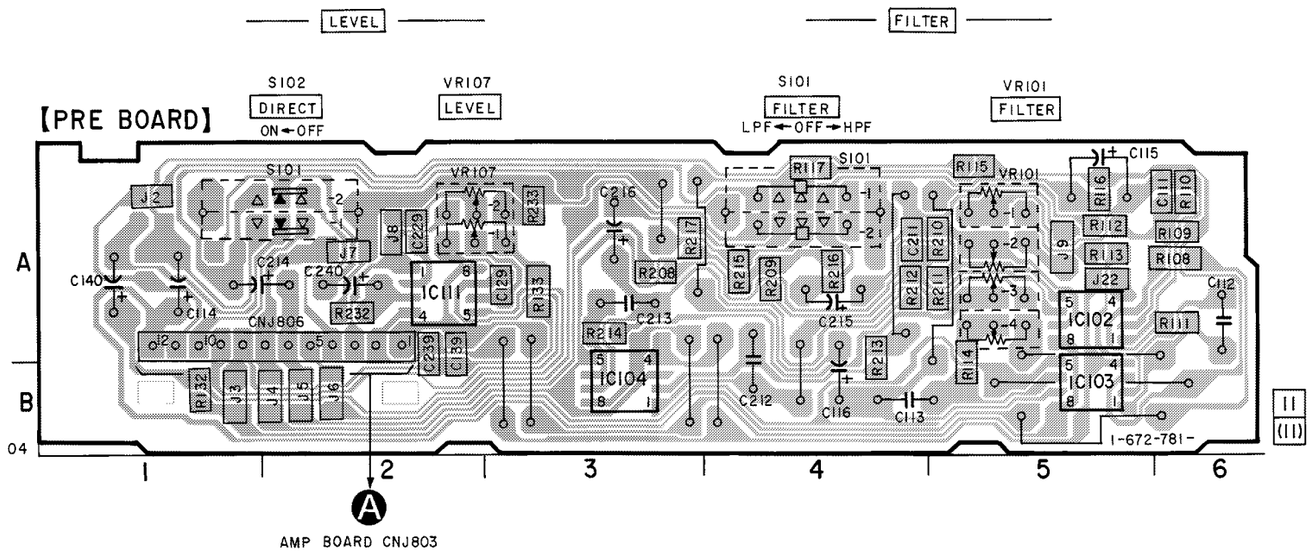
- **Semiconductor Location**

Ref. No.	Location
IC102	A-5
IC103	B-5
IC104	B-3
IC111	A-2

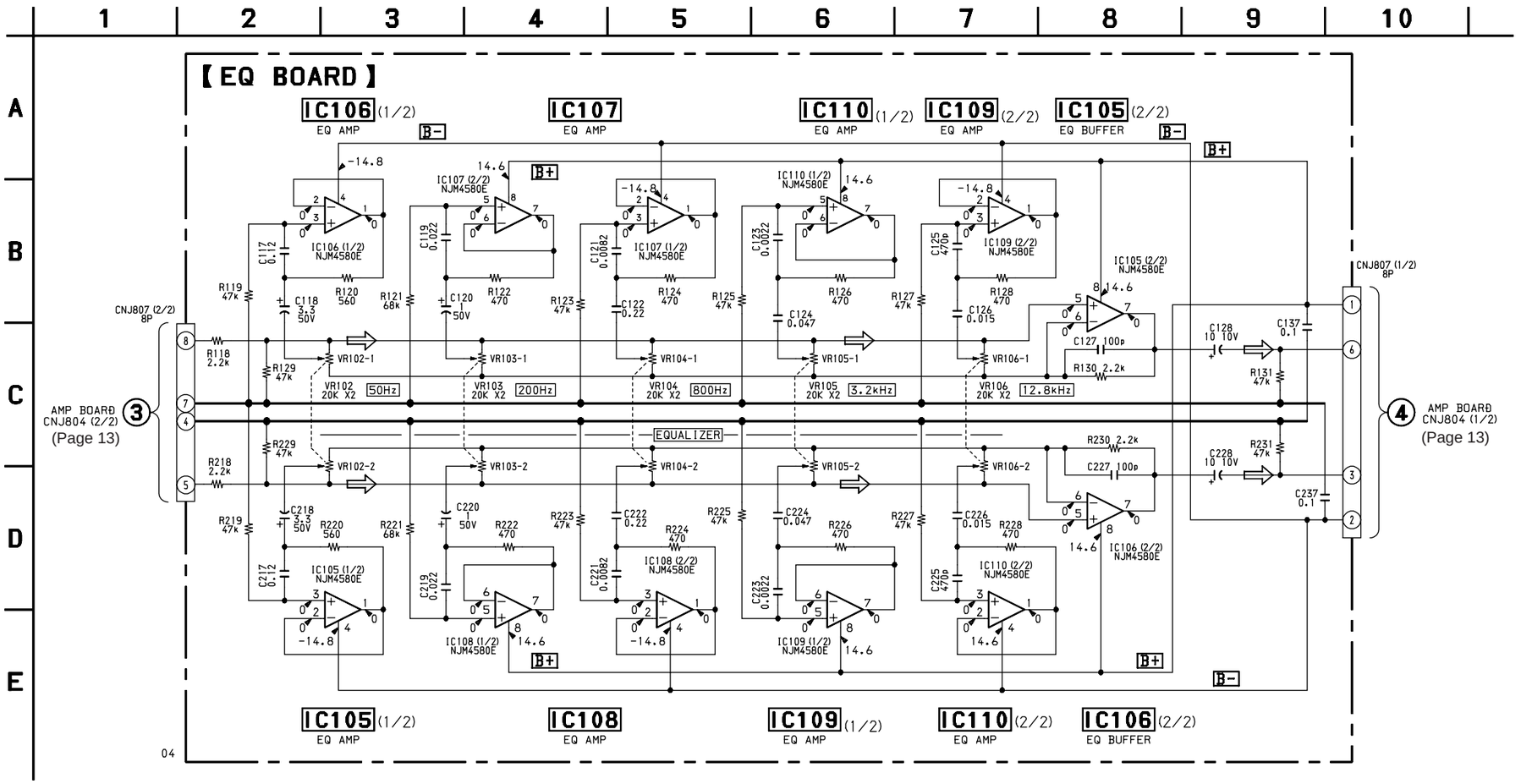
Note on Printed Wiring Board:

- ○—— : parts extracted from the component side.
- ▒▒▒ : Pattern from the side which enables seeing.

3-5. PRINTED WIRING BOARD — PRE SECTION —



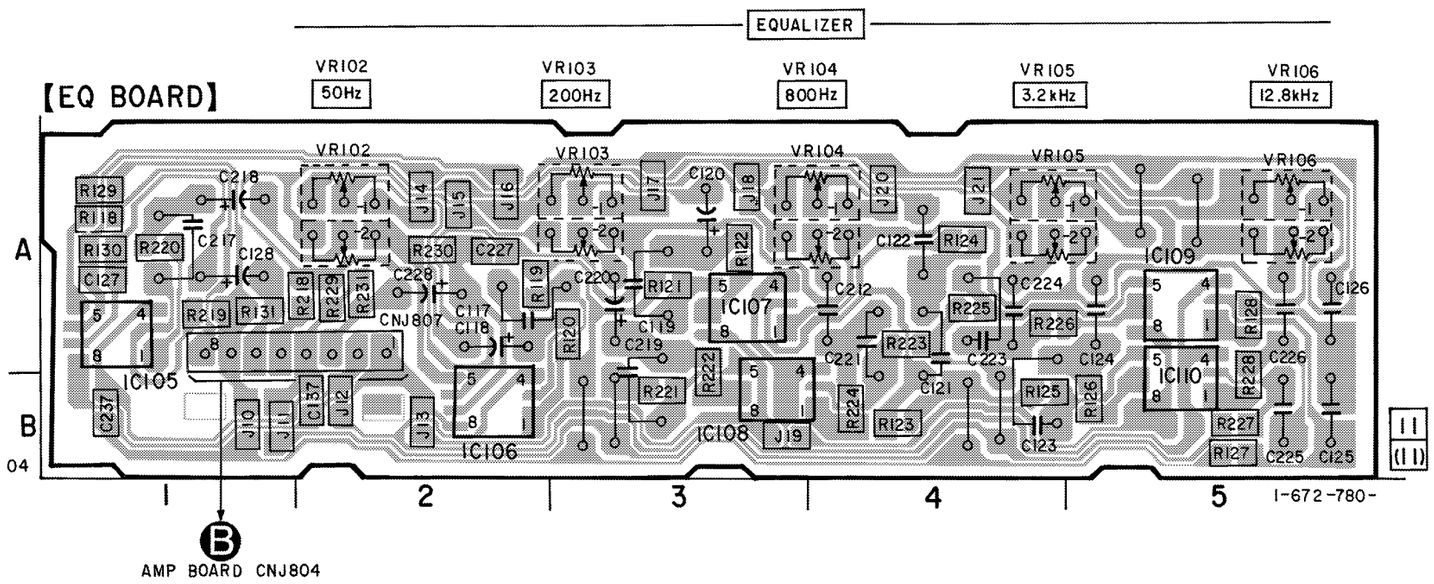
3-6. SCHEMATIC DIAGRAM — EQ SECTION —



Note on Schematic Diagram:

- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- % : indicates tolerance.
- : nonflammable resistor.
- B + : B+ Line.
- B − : B– Line.
- Power voltage is dc 14.4V and fed with regulated dc power supply from +12V and REMOTE terminals.
- Voltage is dc with respect to ground under no-signal condition.
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : AUDIO

3-7. PRINTED WIRING BOARD — EQ SECTION —



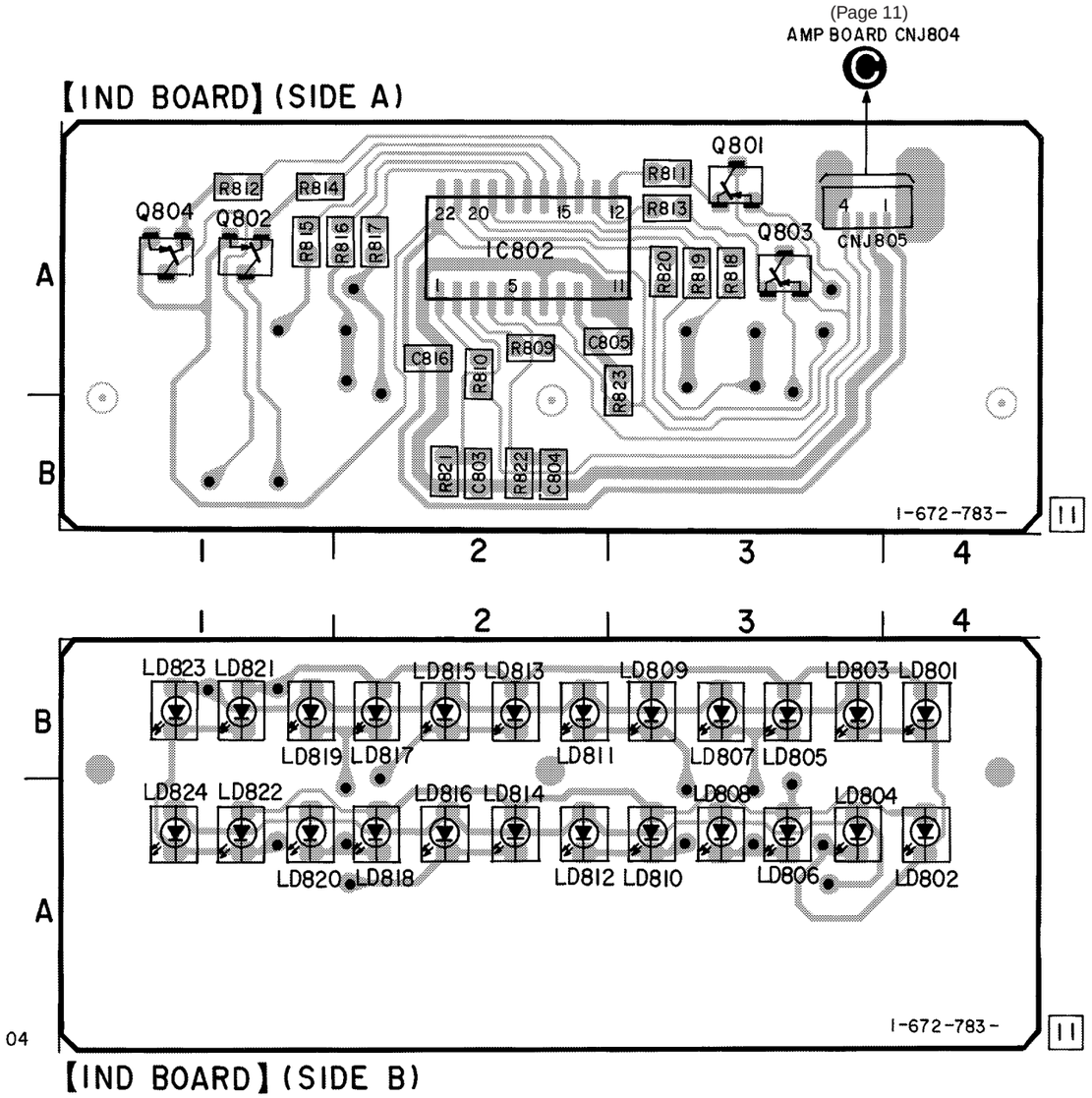
- **Semiconductor Location**

Ref. No.	Location
IC105	B-1
IC106	B-2
IC107	A-3
IC108	B-3
IC109	A-5
IC110	A-5

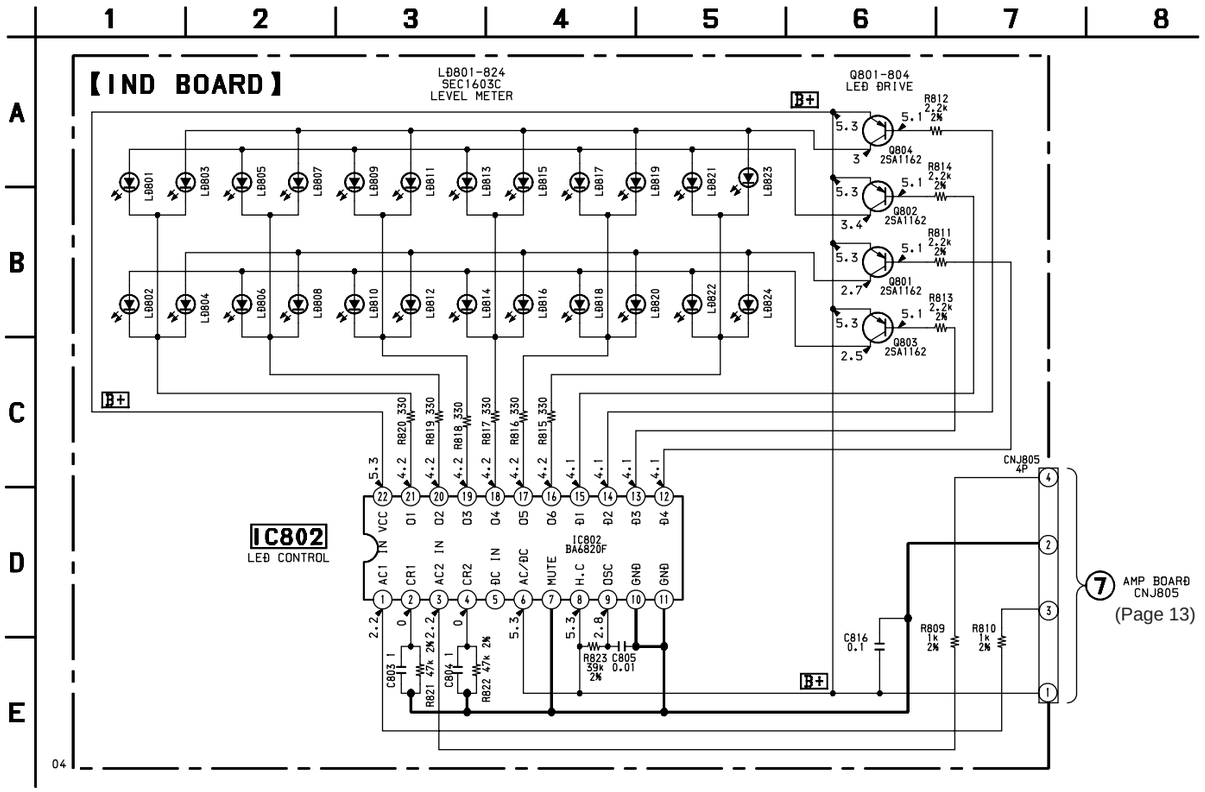
Note on Printed Wiring Board:

- ○——— : parts extracted from the component side.
- ▒▒▒ : Pattern from the side which enables seeing.

3-8. PRINTED WIRING BOARD — IND SECTION —



3-9. SCHEMATIC DIAGRAM — IND SECTION — • Refer to page 23 for IC Block Diagrams.



• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
IC802	A-2	(LD815)	B-2
		(LD816)	A-2
(LD801)	B-4	(LD817)	B-2
(LD802)	A-4	(LD818)	A-2
(LD803)	B-3	(LD819)	B-1
(LD804)	A-3	(LD820)	A-1
(LD805)	B-3	(LD821)	B-1
(LD806)	A-3	(LD822)	A-1
(LD807)	B-3	(LD823)	B-1
(LD808)	A-3	(LD824)	A-1
(LD809)	B-3		
(LD810)	A-3	Q801	A-3
(LD811)	B-2	Q802	A-1
(LD812)	A-2	Q803	A-3
(LD813)	B-2	Q804	A-1
(LD814)	A-2		

( ) : SIDE B

Note on Printed Wiring Board:

- ——— : parts extracted from the conductor side.
- ● : Through hole.
- ▒▒▒ : Pattern from the side which enables seeing. (The other layer's patterns are not indicated.)

Caution:	
Pattern face side: (Side B)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Side A)	Parts on the parts face side seen from the parts face are indicated.

Note on Schematic Diagram:

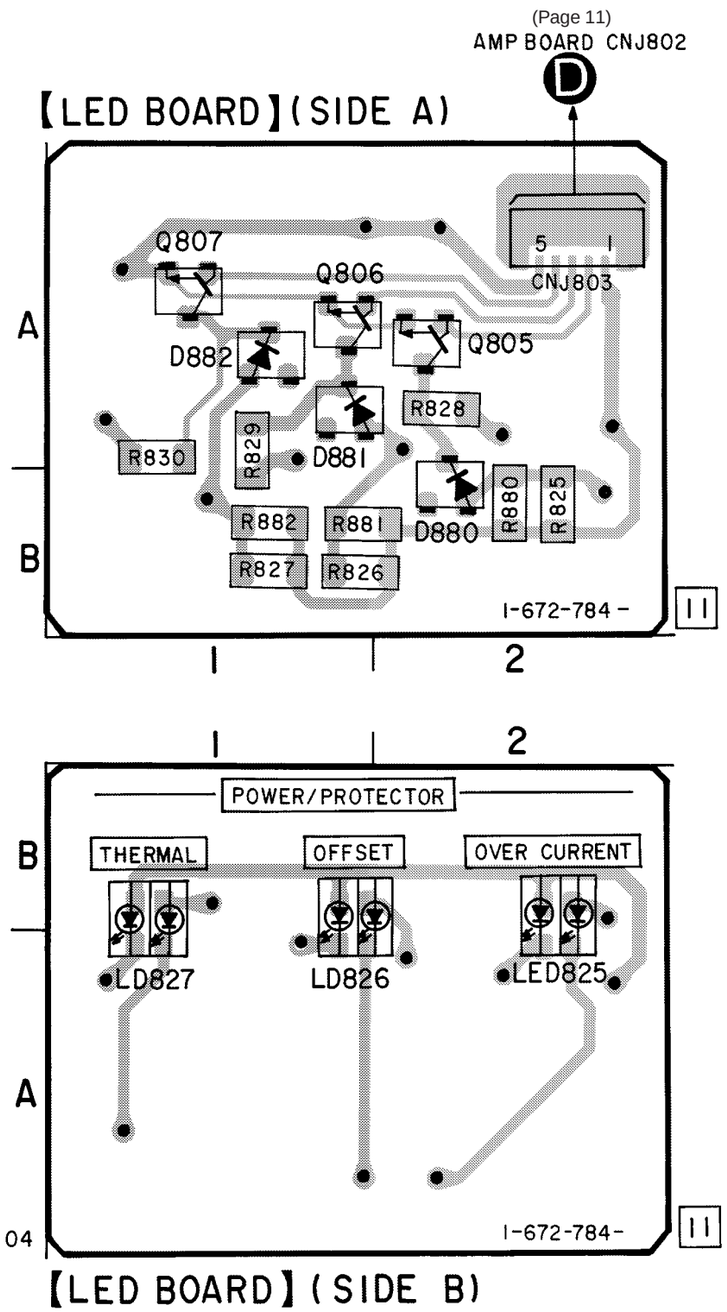
- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- ▭ : panel designation.
- B+ : B+ Line.
- Power voltage is dc 14.4V and fed with regulated dc power supply from +12V and REMOTE terminals.
- Voltage is dc with respect to ground under no-signal condition.
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.

3-10. PRINTED WIRING BOARD — LED SECTION —

- **Semiconductor Location**

Ref. No.	Location
D880	B-2
D881	A-1
D882	A-1
(LD825)	A-2
(LD826)	A-1
(LD827)	A-1
Q805	A-2
Q806	A-1
Q807	A-1

( ) : SIDE B

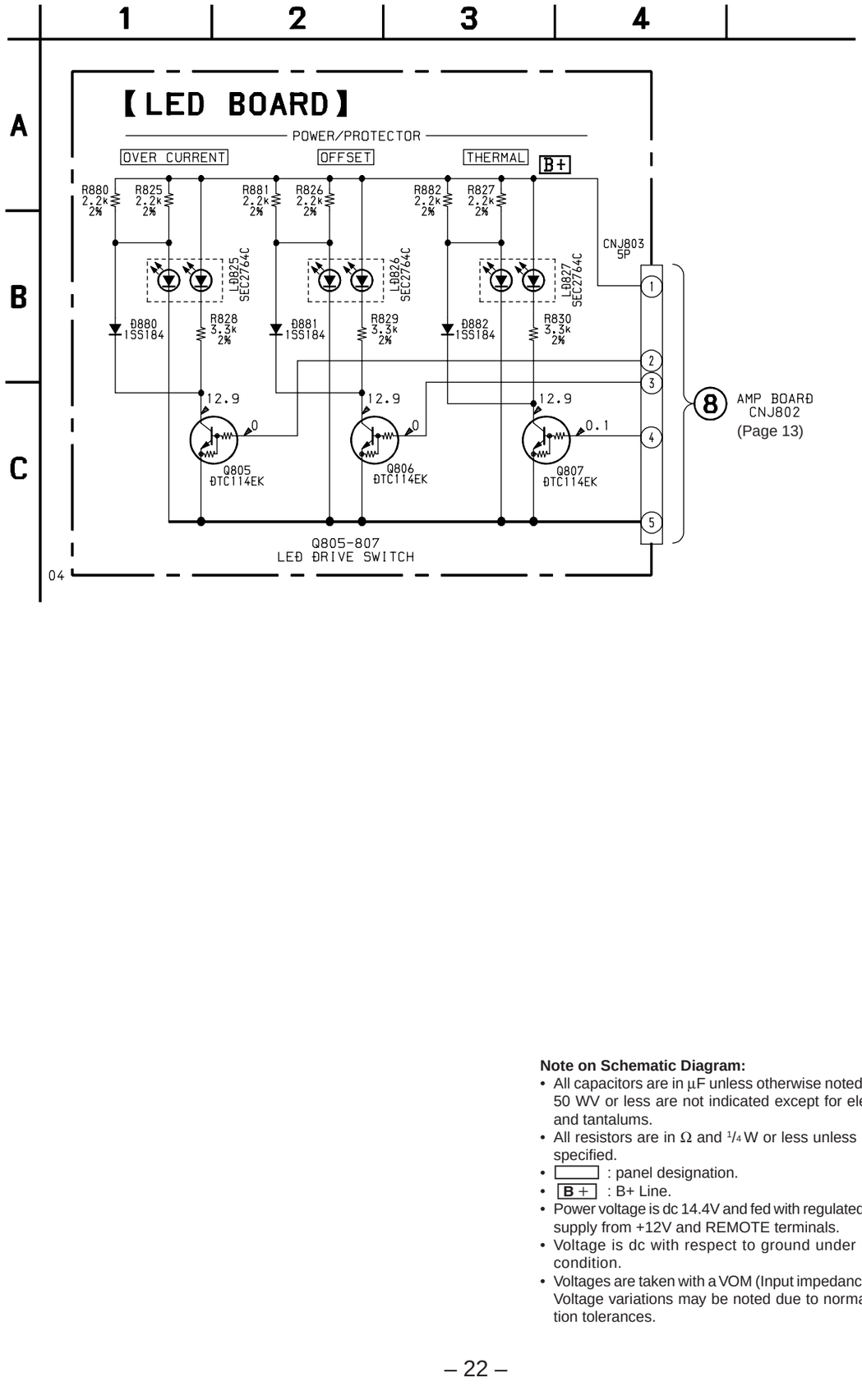


Note on Printed Wiring Board:

- ——— : parts extracted from the conductor side.
- ● : Through hole.
- ▒▒▒ : Pattern from the side which enables seeing. (The other layer's patterns are not indicated.)

Caution:	
Pattern face side: (Side B)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Side A)	Parts on the parts face side seen from the parts face are indicated.

3-11. SCHEMATIC DIAGRAM — LED SECTION —

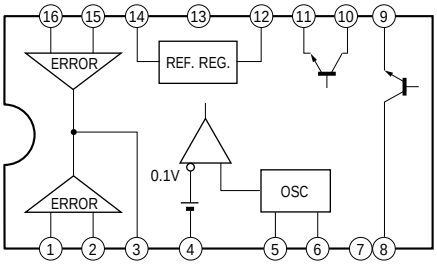


Note on Schematic Diagram:

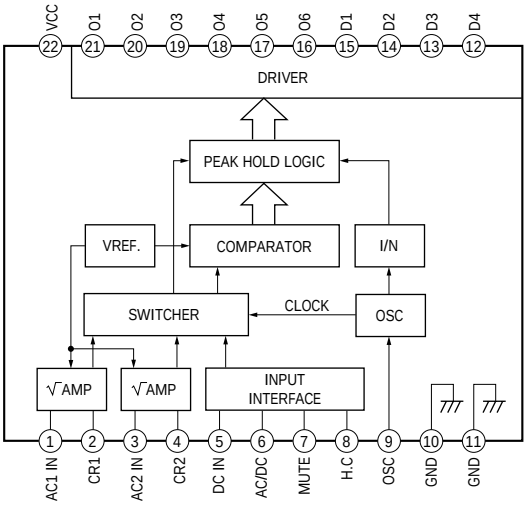
- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- ▭ : panel designation.
- B + : B+ Line.
- Power voltage is dc 14.4V and fed with regulated dc power supply from +12V and REMOTE terminals.
- Voltage is dc with respect to ground under no-signal condition.
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.

• **IC Block Diagrams**

IC901 µPC494GS



IC802 BA6820F

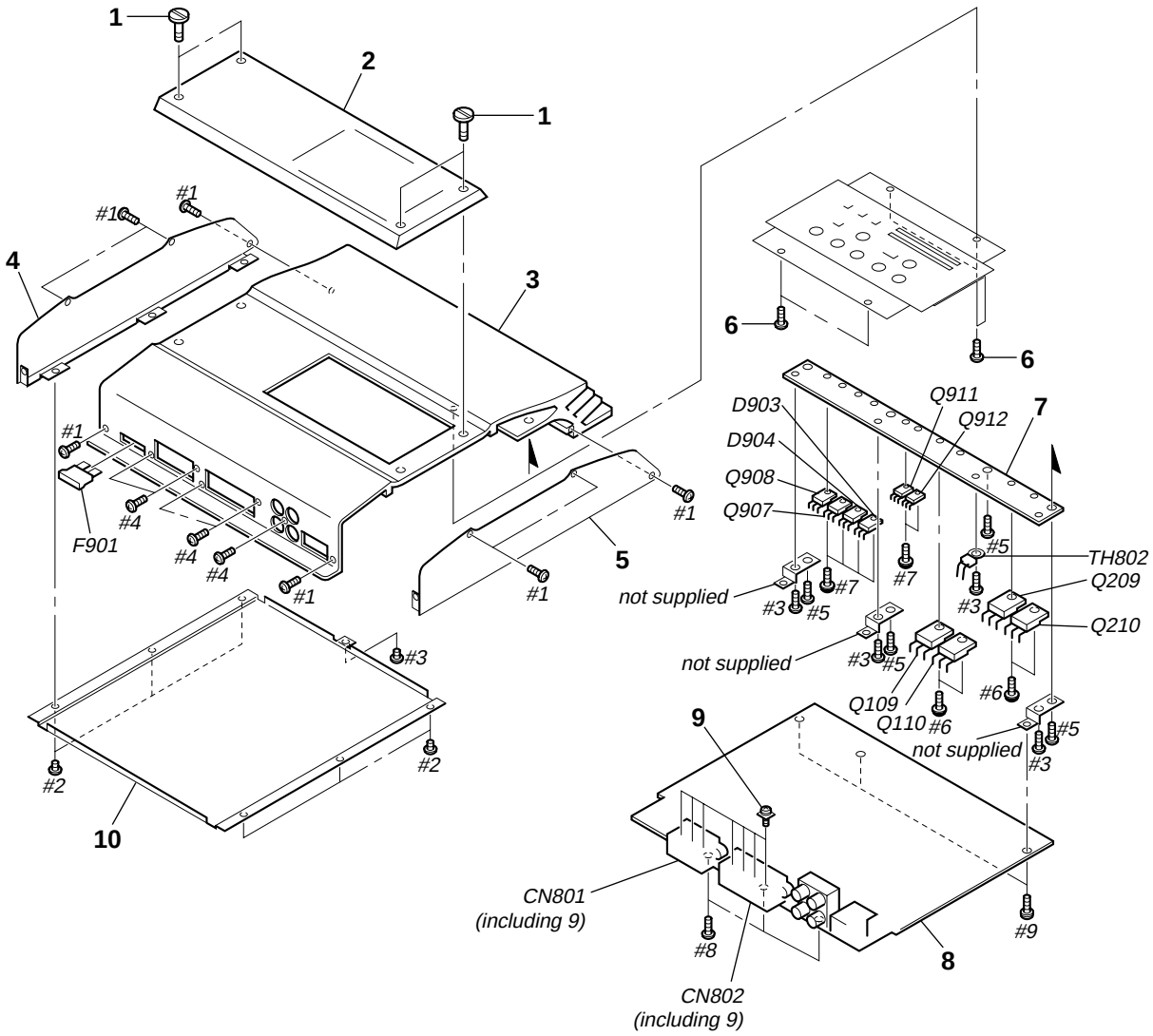


SECTION 4
EXPLODED VIEWS

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example :
  KNOB, BALANCE (WHITE) ... (RED)
  ↑ Parts Color ↑ Cabinet's Color
- Accessories and packing materials and hardware (# mark) list are given in the last of this parts list.

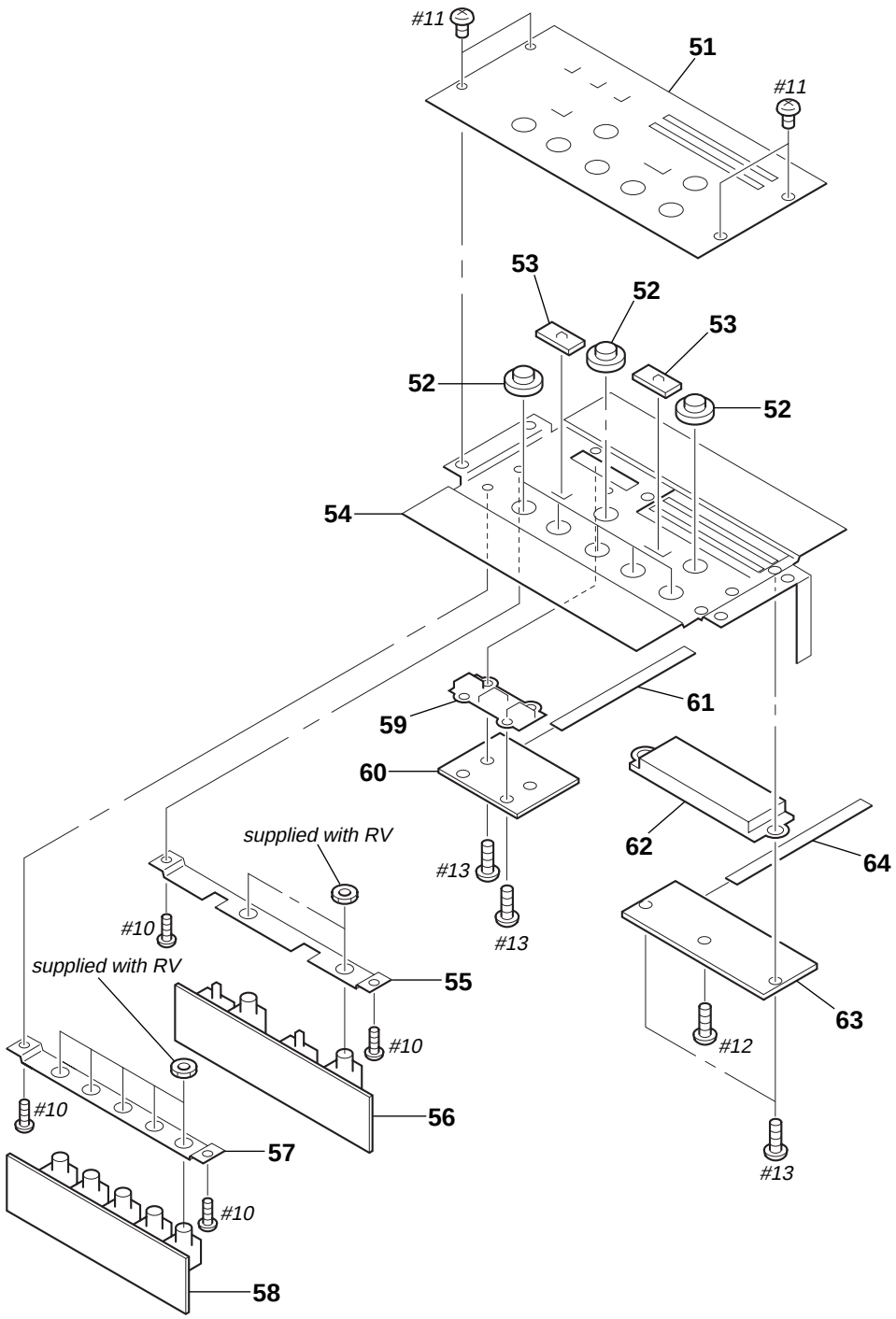
4-1. HEAT SINK SECTION



Ref. No.	Part No.	Description	Remark
1	3-013-266-01	SCREW, ORNAMENTAL	
2	3-033-969-01	PLATE, ORNAMENTAL	
* 3	3-032-784-01	HEAT SINK	
4	3-035-756-01	PANEL (A)	
5	3-035-757-01	PANEL (B)	
6	3-933-766-01	SCREW (3X8) (CZN-N)	
* 7	3-035-759-01	HEAT SINK, SUB	
* 8	A-3317-644-A	AMP BOARD, COMPLETE	
9	3-912-432-01	SCREW M4X8	
* 10	3-035-758-01	PLATE, BOTTOM	
CN801	1-694-511-11	TABLE, TERMINAL (3P) (REMOTE/+12V/GND)	
CN802	1-694-512-11	TABLE, TERMINAL (4P) (SPEAKER OUT)	

Ref. No.	Part No.	Description	Remark
D903	8-719-210-30	DIODE F10P20F(R)	
D904	8-719-210-38	DIODE F10P20FR	
F901	1-532-947-11	FUSE (BLADE TYPE) (AUTO FUSE) (30A)	
Q109	8-729-021-68	TRANSISTOR 2SC4468-OPY	
Q110	8-729-021-69	TRANSISTOR 2SA1695-OPY	
Q209	8-729-021-68	TRANSISTOR 2SC4468-OPY	
Q210	8-729-021-69	TRANSISTOR 2SA1695-OPY	
Q907	8-729-030-72	FET MTAJ50N05HD	
Q908	8-729-030-72	FET MTAJ50N05HD	
Q911	8-729-207-82	TRANSISTOR 2SC3421-Y	
Q912	8-729-207-89	TRANSISTOR 2SA1358-Y	
TH802	1-809-664-51	THERMISTOR, POSITIVE	

4-2. CONTROL PANEL SECTION



Ref. No.	Part No.	Description	Remark
51	3-032-783-01	PLATE, ORNAMENTAL	
52	3-035-767-01	KNOB (VR)	
53	3-035-768-01	KNOB (SW)	
* 54	3-035-764-01	BRACKET (CHASSIS)	
* 55	3-035-762-01	BRACKET (SW)	
* 56	1-672-781-11	PRE BOARD	
* 57	3-035-761-01	BRACKET (VR)	
* 58	1-672-780-11	EQ BOARD	
59	3-035-765-01	LENS (A)	
* 60	1-672-784-11	LED BOARD	
61	1-790-765-11	CABLE, PARALLEL (5P)	
62	3-035-766-01	LENS (B)	
* 63	1-672-783-11	IND BOARD	
64	1-790-764-11	CABLE, PARALLEL (4P)	

AMP

SECTION 5
ELECTRICAL PARTS LIST

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : μ, for example:
  uA.. : μA.. uPA.. : μPA..
  uPB.. : μPB.. uPC.. : μPC.. uPD.. : μPD..
- CAPACITORS
  uF : μF
- COILS
  uH : μH

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
*	A-3317-644-A	AMP BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C101	1-126-047-11	ELECT	4.7uF	20%	50V
C102	1-126-047-11	ELECT	4.7uF	20%	50V
C103	1-163-081-00	CERAMIC CHIP	0.22uF		25V
C104	1-163-081-00	CERAMIC CHIP	0.22uF		25V
C105	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C106	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C107	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C108	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C109	1-126-025-11	ELECT	330uF	20%	25V
C110	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C130	1-124-994-11	ELECT	100uF	20%	10V
C131	1-164-740-11	CERAMIC CHIP	33PF	5%	50V
C132	1-102-514-11	CERAMIC	22PF	5%	50V
C134	1-130-495-11	MYLAR	0.1uF	5%	50V
C135	1-130-491-00	MYLAR	0.047uF	5%	50V
C138	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C201	1-126-047-11	ELECT	4.7uF	20%	50V
C202	1-126-047-11	ELECT	4.7uF	20%	50V
C203	1-163-081-00	CERAMIC CHIP	0.22uF		25V
C204	1-163-081-00	CERAMIC CHIP	0.22uF		25V
C205	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C206	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C207	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C208	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C209	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C210	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C230	1-124-994-11	ELECT	100uF	20%	10V
C231	1-164-740-11	CERAMIC CHIP	33PF	5%	50V
C232	1-102-514-11	CERAMIC	22PF	5%	50V
C234	1-130-495-11	MYLAR	0.1uF	5%	50V
C235	1-130-491-00	MYLAR	0.047uF	5%	50V
C236	1-163-081-00	CERAMIC CHIP	0.22uF		25V
C238	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C801	1-126-044-11	ELECT	1uF	20%	50V
C802	1-126-044-11	ELECT	1uF	20%	50V
C806	1-126-006-11	ELECT	22uF	20%	16V
C807	1-126-006-11	ELECT	22uF	20%	16V
C808	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C809	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C811	1-107-715-11	ELECT	22uF	20%	50V
C812	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C813	1-126-022-11	ELECT	47uF	20%	10V
C814	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C815	1-130-483-00	MYLAR	0.01uF	5%	50V
C901	1-136-899-11	MYLAR	0.47uF	5%	50V
C902	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C903	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C904	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C905	1-130-471-00	MYLAR	0.001uF	5%	50V
C906	1-126-006-11	ELECT	22uF	20%	16V
C907	1-124-994-11	ELECT	100uF	20%	10V
C908	1-126-023-11	ELECT	100uF	20%	16V
C909	1-130-495-11	MYLAR	0.1uF	5%	50V
C910	1-111-044-11	ELECT	2200uF	20%	16V
C911	1-111-044-11	ELECT	2200uF	20%	16V
C913	1-130-495-11	MYLAR	0.1uF	5%	50V
C914	1-130-495-11	MYLAR	0.1uF	5%	50V
C915	1-128-712-11	ELECT	3300uF		50V
C916	1-128-712-11	ELECT	3300uF		50V
C917	1-126-052-11	ELECT	100uF	20%	50V
C918	1-126-052-11	ELECT	100uF	20%	50V
C919	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C920	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C921	1-126-023-11	ELECT	100uF	20%	16V
C922	1-126-023-11	ELECT	100uF	20%	16V
C923	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C924	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C927	1-126-023-11	ELECT	100uF	20%	16V
C928	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C929	1-124-994-11	ELECT	100uF	20%	10V
C930	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
		< TERMINAL TABLE >			
CN801	1-694-511-11	TABLE, TERMINAL (3P) (REMOTE/+12V/GND)			
CN802	1-694-512-11	TABLE, TERMINAL (4P) (SPEAKER OUT)			
		< CONNECTOR >			
CN803	1-784-904-21	CONNECTOR 4P (HIGH LEVEL INPUT)			
CNP803	1-793-039-11	CONNECTOR, BOARD TO BOARD 12P			
CNP804	1-793-037-11	CONNECTOR, BOARD TO BOARD 8P			
		< JACK >			
CNJ801	1-779-078-11	JACK, PIN 4P (INPUT L/R,OUTPUT L/R)			

Ref. No.	Part No.	Description	Remark
		< DIODE >	
D101	8-719-801-78	DIODE 1SS184	
D102	8-719-801-78	DIODE 1SS184	
D201	8-719-801-78	DIODE 1SS184	
D202	8-719-801-78	DIODE 1SS184	
D801	8-719-801-78	DIODE 1SS184	
D802	8-719-801-78	DIODE 1SS184	
D803	8-719-801-78	DIODE 1SS184	
D806	8-719-025-34	DIODE 02CZ6.8-TE85L	
D901	8-719-054-55	DIODE 1SS306(TE85L)	
D902	8-719-054-55	DIODE 1SS306(TE85L)	
D903	8-719-210-30	DIODE F10P20F(R)	
D904	8-719-210-38	DIODE F10P20FR	
D905	8-719-801-78	DIODE 1SS184	
D906	8-719-801-78	DIODE 1SS184	
D907	8-719-025-49	DIODE 02CZ15-TE85L	
D908	8-719-025-49	DIODE 02CZ15-TE85L	
D909	8-719-025-31	DIODE 02CZ5.6-TE85L	
D910	8-719-025-34	DIODE 02CZ6.8-TE85L	
D911	8-719-025-50	DIODE 02CZ16-TE85L	
D912	8-719-991-33	DIODE 1SS133T-77	
		< IC >	
IC101	8-759-711-82	IC NJM4580E	
IC801	8-759-711-82	IC NJM4580E	
IC901	8-759-144-88	IC uPC494GS	
		< PHOTO COUPLER >	
IC902	8-719-156-72	PHOTO COUPLER PS2501-1KA	
		< JUMPER RESISTOR >	
J1	1-216-295-00	METAL CHIP 0 5%	1/10W
		< COIL >	
L901	1-416-322-11	INDUCTOR 278uH	
L902	1-410-396-71	INDUCTOR 0.45uH	
		< PILOT LAMP >	
PL801	1-518-540-00	LAMP, PILOT (T3.16V/40mA)	
		< TRANSISTOR >	
Q101	8-729-903-10	TRANSISTOR FMW1	
Q102	8-729-026-57	TRANSISTOR FMS1A-T148	
Q103	8-729-232-32	TRANSISTOR 2SA965	
Q104	8-729-020-80	TRANSISTOR 2SC2235-OY-TPE6	
Q105	8-729-216-21	TRANSISTOR 2SA1162-Y	
Q106	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q107	8-729-207-82	TRANSISTOR 2SC3421-Y	
Q108	8-729-207-89	TRANSISTOR 2SA1358-Y	
Q109	8-729-021-68	TRANSISTOR 2SC4468-OPY	
Q110	8-729-021-69	TRANSISTOR 2SA1695-OPY	
Q111	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q112	8-729-203-48	TRANSISTOR 2SC3327-A	
Q201	8-729-903-10	TRANSISTOR FMW1	
Q202	8-729-026-57	TRANSISTOR FMS1A-T148	
Q203	8-729-232-32	TRANSISTOR 2SA965	
Q204	8-729-020-80	TRANSISTOR 2SC2235-OY-TPE6	
Q205	8-729-216-21	TRANSISTOR 2SA1162-Y	
Q206	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q207	8-729-207-82	TRANSISTOR 2SC3421-Y	
Q208	8-729-207-89	TRANSISTOR 2SA1358-Y	
Q209	8-729-021-68	TRANSISTOR 2SC4468-OPY	
Q210	8-729-021-69	TRANSISTOR 2SA1695-OPY	
Q211	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q212	8-729-203-48	TRANSISTOR 2SC3327-A	
Q808	8-729-216-21	TRANSISTOR 2SA1162-Y	
Q809	8-729-216-21	TRANSISTOR 2SA1162-Y	
Q810	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q811	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q812	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q813	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q814	8-729-216-21	TRANSISTOR 2SA1162-Y	
Q815	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q816	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q817	8-729-216-21	TRANSISTOR 2SA1162-Y	
Q901	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q902	8-729-041-38	TRANSISTOR 2SB1241TV2Q	
Q903	8-729-216-21	TRANSISTOR 2SA1162-Y	
Q904	8-729-207-82	TRANSISTOR 2SC3421-Y	
Q905	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q906	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q907	8-729-030-72	FET MTAJ50N05HD	
Q908	8-729-030-72	FET MTAJ50N05HD	
Q911	8-729-207-82	TRANSISTOR 2SC3421-Y	
Q912	8-729-207-89	TRANSISTOR 2SA1358-Y	
		< RESISTOR >	
R101	1-208-518-61	RES,CHIP 22K 2%	1/10W
R102	1-208-518-61	RES,CHIP 22K 2%	1/10W
R103	1-208-522-61	RES,CHIP 33K 2%	1/10W
R104	1-208-526-61	RES,CHIP 47K 2%	1/10W
R105	1-208-526-61	RES,CHIP 47K 2%	1/10W
R106	1-208-522-61	RES,CHIP 33K 2%	1/10W
R107	1-216-471-11	METAL OXIDE 27 5%	3W F
R134	1-208-510-61	RES,CHIP 10K 2%	1/8W
R135	1-208-449-61	RES,CHIP 3.3K 2%	1/10W
R136	1-249-421-11	CARBON 2.2K 5%	1/4W
R137	1-208-441-61	RES,CHIP 1.5K 2%	1/10W
R138	1-208-441-61	RES,CHIP 1.5K 2%	1/10W
R139	1-208-441-61	RES,CHIP 1.5K 2%	1/10W
R140	1-208-441-61	RES,CHIP 1.5K 2%	1/10W
R141	1-216-234-00	RES,CHIP 33K 2%	1/8W
R142	1-208-522-61	RES,CHIP 33K 2%	1/10W
R143	1-208-365-61	RES,CHIP 100 2%	1/10W

AMP

Ref. No.	Part No.	Description			Remark
R144	1-208-365-61	RES,CHIP	100	2%	1/10W
R145	1-208-534-61	RES,CHIP	100K	2%	1/10W
R146	1-208-534-61	RES,CHIP	100K	2%	1/10W
R147	1-208-435-61	RES,CHIP	820	2%	1/10W
R148	1-208-423-61	RES,CHIP	270	2%	1/10W
R149	1-208-812-11	RES,CHIP	18K	2%	1/10W
R150	1-247-850-11	CARBON	6.2K	5%	1/4W
R151	1-208-381-61	RES,CHIP	4.7	2%	1/8W
R152	1-208-381-61	RES,CHIP	4.7	2%	1/8W
R153	1-216-182-00	RES,CHIP	220	2%	1/8W
R154	1-205-991-11	METAL PLATE	0.1X2	10%	5W
R155	1-208-441-61	RES,CHIP	1.5K	2%	1/10W
R156	1-208-437-61	RES,CHIP	1K	2%	1/10W
R157	1-208-510-61	RES,CHIP	10K	2%	1/8W
R158	1-208-550-61	RES,CHIP	470K	2%	1/10W
R159	1-215-859-00	METAL OXIDE	22	5%	1W F
R160	1-216-210-00	RES,CHIP	3.3K	2%	1/8W
R161	1-215-859-00	METAL OXIDE	22	5%	1W F
R201	1-208-518-61	RES,CHIP	22K	2%	1/10W
R202	1-208-518-61	RES,CHIP	22K	2%	1/10W
R203	1-208-522-61	RES,CHIP	33K	2%	1/10W
R204	1-208-526-61	RES,CHIP	47K	2%	1/10W
R205	1-208-526-61	RES,CHIP	47K	2%	1/10W
R206	1-208-522-61	RES,CHIP	33K	2%	1/10W
R207	1-216-471-11	METAL OXIDE	27	5%	3W F
R234	1-208-510-61	RES,CHIP	10K	2%	1/8W
R235	1-208-449-61	RES,CHIP	3.3K	2%	1/10W
R236	1-249-421-11	CARBON	2.2K	5%	1/4W
R237	1-208-441-61	RES,CHIP	1.5K	2%	1/10W
R238	1-208-441-61	RES,CHIP	1.5K	2%	1/10W
R239	1-208-441-61	RES,CHIP	1.5K	2%	1/10W
R240	1-208-441-61	RES,CHIP	1.5K	2%	1/10W
R241	1-216-234-00	RES,CHIP	33K	2%	1/8W
R242	1-208-522-61	RES,CHIP	33K	2%	1/10W
R243	1-208-365-61	RES,CHIP	100	2%	1/10W
R244	1-208-365-61	RES,CHIP	100	2%	1/10W
R245	1-208-534-61	RES,CHIP	100K	2%	1/10W
R246	1-208-534-61	RES,CHIP	100K	2%	1/10W
R247	1-208-435-61	RES,CHIP	820	2%	1/10W
R248	1-208-423-61	RES,CHIP	270	2%	1/10W
R249	1-208-812-11	RES,CHIP	18K	2%	1/10W
R250	1-247-850-11	CARBON	6.2K	5%	1/4W
R251	1-208-381-61	RES,CHIP	4.7	2%	1/8W
R252	1-208-381-61	RES,CHIP	4.7	2%	1/8W
R253	1-216-182-00	RES,CHIP	220	2%	1/8W
R254	1-205-991-11	METAL PLATE	0.1X2	10%	5W
R255	1-208-441-61	RES,CHIP	1.5K	2%	1/10W
R256	1-208-437-61	RES,CHIP	1K	2%	1/10W
R257	1-208-510-61	RES,CHIP	10K	2%	1/8W
R258	1-208-550-61	RES,CHIP	470K	2%	1/10W
R259	1-215-859-00	METAL OXIDE	22	5%	1W F
R260	1-208-486-61	RES,CHIP	1K	2%	1/8W
R261	1-215-859-00	METAL OXIDE	22	5%	1W F

Ref. No.	Part No.	Description			Remark
R801	1-208-522-61	RES,CHIP	33K	2%	1/10W
R802	1-208-522-61	RES,CHIP	33K	2%	1/10W
R803	1-208-462-61	RES,CHIP	10K	2%	1/10W
R804	1-208-462-61	RES,CHIP	10K	2%	1/10W
R824	1-208-558-61	RES,CHIP	1M	2%	1/10W
R831	1-208-462-61	RES,CHIP	10K	2%	1/10W
R832	1-208-462-61	RES,CHIP	10K	2%	1/10W
R833	1-208-462-61	RES,CHIP	10K	2%	1/10W
R834	1-216-210-00	RES,CHIP	3.3K	2%	1/8W
R835	1-208-526-61	RES,CHIP	47K	2%	1/10W
R836	1-208-462-61	RES,CHIP	10K	2%	1/10W
R837	1-208-462-61	RES,CHIP	10K	2%	1/10W
R838	1-216-210-00	RES,CHIP	3.3K	2%	1/8W
R839	1-208-462-61	RES,CHIP	10K	2%	1/10W
R840	1-208-462-61	RES,CHIP	10K	2%	1/10W
R841	1-208-550-61	RES,CHIP	470K	2%	1/10W
R842	1-218-764-11	RES,CHIP	330K	2%	1/10W
R843	1-208-423-61	RES,CHIP	270	2%	1/10W
R844	1-208-449-61	RES,CHIP	3.3K	2%	1/10W
R845	1-218-760-11	RES,CHIP	220K	2%	1/10W
R846	1-216-210-00	RES,CHIP	3.3K	2%	1/8W
R847	1-208-510-61	RES,CHIP	10K	2%	1/8W
R848	1-216-647-11	METAL CHIP	680	0.5%	1/10W
R849	1-216-698-11	METAL CHIP	91K	0.5%	1/10W
R850	1-208-522-61	RES,CHIP	33K	2%	1/10W
R851	1-208-462-61	RES,CHIP	10K	2%	1/10W
R852	1-208-462-61	RES,CHIP	10K	2%	1/10W
R853	1-208-462-61	RES,CHIP	10K	2%	1/10W
R854	1-208-462-61	RES,CHIP	10K	2%	1/10W
R855	1-208-558-61	RES,CHIP	1M	2%	1/10W
R856	1-208-494-61	RES,CHIP	2.2K	2%	1/8W
R857	1-208-462-61	RES,CHIP	10K	2%	1/10W
R901	1-249-429-11	CARBON	10K	5%	1/4W
R902	1-208-453-61	RES,CHIP	4.7K	2%	1/10W
R903	1-208-474-61	RES,CHIP	330	2%	1/8W
R904	1-216-202-00	RES,CHIP	1.5K	2%	1/8W
R905	1-216-202-00	RES,CHIP	1.5K	2%	1/8W
R906	1-208-449-61	RES,CHIP	3.3K	2%	1/10W
R907	1-208-462-61	RES,CHIP	10K	2%	1/10W
R908	1-208-462-61	RES,CHIP	10K	2%	1/10W
R909	1-208-449-61	RES,CHIP	3.3K	2%	1/10W
R910	1-208-518-61	RES,CHIP	22K	2%	1/10W
R911	1-208-812-11	RES,CHIP	18K	2%	1/10W
R912	1-216-103-00	METAL CHIP	180K	5%	1/10W
R913	1-208-478-11	RES,CHIP	470	2%	1/8W
R914	1-208-478-11	RES,CHIP	470	2%	1/8W
R917	1-208-405-61	RES,CHIP	47	2%	1/8W
R918	1-208-405-61	RES,CHIP	47	2%	1/8W
R919	1-208-437-61	RES,CHIP	1K	2%	1/10W
R920	1-208-437-61	RES,CHIP	1K	2%	1/10W
R921	1-208-373-11	RES,CHIP	2.2	2%	1/8W
R922	1-208-373-11	RES,CHIP	2.2	2%	1/8W
R925	1-249-424-11	CARBON	3.9K	5%	1/4W

Ref. No.	Part No.	Description			Remark
R926	1-249-424-11	CARBON	3.9K	5%	1/4W
R935	1-208-437-61	RES,CHIP	1K	2%	1/10W
		< TRANSFORMER >			
T901	1-433-851-11	TRANSFORMER, DC-DC CONVERTER			
		< THERMISTOR >			
TH801	1-808-877-11	THERMISTOR			
TH802	1-809-664-51	THERMISTOR, POSITIVE			
**********					
*	1-672-780-11	EQ BOARD			
		*********			
		< CAPACITOR >			
C117	1-130-496-00	MYLAR	0.12uF	5%	50V
C118	1-126-046-11	ELECT	3.3uF	20%	50V
C119	1-130-487-00	MYLAR	0.022uF	5%	50V
C120	1-126-044-11	ELECT	1uF	20%	50V
C121	1-136-293-11	MYLAR	0.0082uF	5%	50V
C122	1-130-499-00	MYLAR	0.22uF	5%	50V
C123	1-130-475-00	MYLAR	0.0022uF	5%	50V
C124	1-130-491-00	MYLAR	0.047uF	5%	50V
C125	1-130-467-00	MYLAR	470PF	5%	50V
C126	1-130-485-00	MYLAR	0.015uF	5%	50V
C127	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C128	1-126-022-11	ELECT	47uF	20%	10V
C137	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C217	1-130-496-00	MYLAR	0.12uF	5%	50V
C218	1-126-046-11	ELECT	3.3uF	20%	50V
C219	1-130-487-00	MYLAR	0.022uF	5%	50V
C220	1-126-044-11	ELECT	1uF	20%	50V
C221	1-136-293-11	MYLAR	0.0082uF	5%	50V
C222	1-130-499-00	MYLAR	0.22uF	5%	50V
C223	1-130-475-00	MYLAR	0.0022uF	5%	50V
C224	1-130-491-00	MYLAR	0.047uF	5%	50V
C225	1-130-467-00	MYLAR	470PF	5%	50V
C226	1-130-485-00	MYLAR	0.015uF	5%	50V
C227	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C228	1-126-022-11	ELECT	47uF	20%	10V
C237	1-165-319-11	CERAMIC CHIP	0.1uF		50V
		< CONNECTOR >			
CNJ807	1-793-040-11	CONNECTOR, BOARD TO BOARD 8P			
		< IC >			
IC105	8-759-711-82	IC NJM4580E			
IC106	8-759-711-82	IC NJM4580E			
IC107	8-759-711-82	IC NJM4580E			
IC108	8-759-711-82	IC NJM4580E			
IC109	8-759-711-82	IC NJM4580E			
IC110	8-759-711-82	IC NJM4580E			

Ref. No.	Part No.	Description			Remark
		< RESISTOR >			
R118	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W
R119	1-208-526-61	RES,CHIP	47K	2%	1/10W
R120	1-208-776-11	RES,CHIP	560	2%	1/10W
R121	1-208-826-11	RES,CHIP	68K	2%	1/10W
R122	1-208-774-11	RES,CHIP	470	2%	1/10W
R123	1-208-526-61	RES,CHIP	47K	2%	1/10W
R124	1-208-774-11	RES,CHIP	470	2%	1/10W
R125	1-208-526-61	RES,CHIP	47K	2%	1/10W
R126	1-208-774-11	RES,CHIP	470	2%	1/10W
R127	1-208-526-61	RES,CHIP	47K	2%	1/10W
R128	1-208-774-11	RES,CHIP	470	2%	1/10W
R129	1-208-526-61	RES,CHIP	47K	2%	1/10W
R130	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W
R131	1-208-526-61	RES,CHIP	47K	2%	1/10W
R218	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W
R219	1-208-526-61	RES,CHIP	47K	2%	1/10W
R220	1-208-776-11	RES,CHIP	560	2%	1/10W
R221	1-208-826-11	RES,CHIP	68K	2%	1/10W
R222	1-208-774-11	RES,CHIP	470	2%	1/10W
R223	1-208-526-61	RES,CHIP	47K	2%	1/10W
R224	1-208-774-11	RES,CHIP	470	2%	1/10W
R225	1-208-526-61	RES,CHIP	47K	2%	1/10W
R226	1-208-774-11	RES,CHIP	470	2%	1/10W
R227	1-208-526-61	RES,CHIP	47K	2%	1/10W
R228	1-208-774-11	RES,CHIP	470	2%	1/10W
R229	1-208-526-61	RES,CHIP	47K	2%	1/10W
R230	1-208-494-61	RES,CHIP	2.2K	2%	1/8W
R231	1-208-526-61	RES,CHIP	47K	2%	1/10W
		< VARIABLE RESISTOR >			
VR102	1-225-835-11	RES, VAR	20K (50Hz)		
VR103	1-225-835-11	RES, VAR	20K (200Hz)		
VR104	1-225-835-11	RES, VAR	20K (800Hz)		
VR105	1-225-835-11	RES, VAR	20K (3.2kHz)		
VR106	1-225-835-11	RES, VAR	20K (12.8kHz)		
**********					
*	1-672-783-11	IND BOARD			
		**********			
		< CAPACITOR >			
C803	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C804	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C805	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C816	1-165-319-11	CERAMIC CHIP	0.1uF		50V
		< IC >			
IC802	8-759-970-62	IC BA6820F			
		< DIODE >			
LD801	8-719-074-70	LED SEC1603C			
LD802	8-719-074-70	LED SEC1603C			

IND **LED** **PRE**

Ref. No.	Part No.	Description			Remark
LD803	8-719-074-70	LED SEC1603C			
LD804	8-719-074-70	LED SEC1603C			
LD805	8-719-074-70	LED SEC1603C			
LD806	8-719-074-70	LED SEC1603C			
LD807	8-719-074-70	LED SEC1603C			
LD808	8-719-074-70	LED SEC1603C			
LD809	8-719-074-70	LED SEC1603C			
LD810	8-719-074-70	LED SEC1603C			
LD811	8-719-074-70	LED SEC1603C			
LD812	8-719-074-70	LED SEC1603C			
LD813	8-719-074-70	LED SEC1603C			
LD814	8-719-074-70	LED SEC1603C			
LD815	8-719-074-70	LED SEC1603C			
LD816	8-719-074-70	LED SEC1603C			
LD817	8-719-074-70	LED SEC1603C			
LD818	8-719-074-70	LED SEC1603C			
LD819	8-719-074-70	LED SEC1603C			
LD820	8-719-074-70	LED SEC1603C			
LD821	8-719-074-70	LED SEC1603C			
LD822	8-719-074-70	LED SEC1603C			
LD823	8-719-074-70	LED SEC1603C			
LD824	8-719-074-70	LED SEC1603C			
		< TRANSISTOR >			
Q801	8-729-216-21	TRANSISTOR 2SA1162-Y			
Q802	8-729-216-21	TRANSISTOR 2SA1162-Y			
Q803	8-729-216-21	TRANSISTOR 2SA1162-Y			
Q804	8-729-216-21	TRANSISTOR 2SA1162-Y			
		< RESISTOR >			
R809	1-208-437-61	RES,CHIP	1K	2%	1/10W
R810	1-208-437-61	RES,CHIP	1K	2%	1/10W
R811	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W
R812	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W
R813	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W
R814	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W
R815	1-208-425-61	RES,CHIP	330	2%	1/10W
R816	1-208-425-61	RES,CHIP	330	2%	1/10W
R817	1-208-425-61	RES,CHIP	330	2%	1/10W
R818	1-208-425-61	RES,CHIP	330	2%	1/10W
R819	1-208-425-61	RES,CHIP	330	2%	1/10W
R820	1-208-425-61	RES,CHIP	330	2%	1/10W
R821	1-208-526-61	RES,CHIP	47K	2%	1/10W
R822	1-208-526-61	RES,CHIP	47K	2%	1/10W
R823	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
**********					
*	1-672-784-11	LED BOARD			
		**********			
		< CONNECTOR >			
CNJ803	1-750-159-21	CONNECTOR, FPC 5P			

Ref. No.	Part No.	Description			Remark
		< DIODE >			
D880	8-719-801-78	DIODE 1SS184			
D881	8-719-801-78	DIODE 1SS184			
D882	8-719-801-78	DIODE 1SS184			
LD825	8-719-070-01	LED SEC2764C (OVER CURRENT)			
LD826	8-719-070-01	LED SEC2764C (OFFSET)			
LD827	8-719-070-01	LED SEC2764C (THERMAL)			
		< TRANSISTOR >			
Q805	8-729-900-53	TRANSISTOR DTC114EK			
Q806	8-729-900-53	TRANSISTOR DTC114EK			
Q807	8-729-900-53	TRANSISTOR DTC114EK			
		< RESISTOR >			
R825	1-208-494-61	RES,CHIP	2.2K	2%	1/8W
R826	1-208-494-61	RES,CHIP	2.2K	2%	1/8W
R827	1-208-494-61	RES,CHIP	2.2K	2%	1/8W
R828	1-216-210-00	RES,CHIP	3.3K	2%	1/8W
R829	1-216-210-00	RES,CHIP	3.3K	2%	1/8W
R830	1-216-210-00	RES,CHIP	3.3K	2%	1/8W
R880	1-208-494-61	RES,CHIP	2.2K	2%	1/8W
R881	1-208-494-61	RES,CHIP	2.2K	2%	1/8W
R882	1-208-494-61	RES,CHIP	2.2K	2%	1/8W
**********					
*	1-672-781-11	PRE BOARD			
		**********			
		< CAPACITOR >			
C111	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
C112	1-130-497-00	MYLAR	0.15uF	5%	50V
C113	1-130-497-00	MYLAR	0.15uF	5%	50V
C114	1-126-022-11	ELECT	47uF	20%	10V
C115	1-126-022-11	ELECT	47uF	20%	10V
C116	1-126-022-11	ELECT	47uF	20%	10V
C129	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C139	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C140	1-126-022-11	ELECT	47uF	20%	10V
C211	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
C212	1-130-497-00	MYLAR	0.15uF	5%	50V
C213	1-130-497-00	MYLAR	0.15uF	5%	50V
C214	1-126-022-11	ELECT	47uF	20%	10V
C215	1-126-022-11	ELECT	47uF	20%	10V
C216	1-126-022-11	ELECT	47uF	20%	10V
C229	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C239	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C240	1-126-022-11	ELECT	47uF	20%	10V
		< CONNECTOR >			
CNJ806	1-793-042-11	CONNECTOR, BOARD TO BOARD 12P			

Ref. No.	Part No.	Description			Remark
		< IC >			
IC102	8-759-711-82	IC NJM4580E			
IC103	8-759-711-82	IC NJM4580E			
IC104	8-759-711-82	IC NJM4580E			
IC111	8-759-711-82	IC NJM4580E			
		< JUMPER RESISTOR >			
J2	1-216-295-00	METAL CHIP	0	5%	1/10W
J3	1-216-296-00	METAL CHIP	0	5%	1/8W
J4	1-216-296-00	METAL CHIP	0	5%	1/8W
J5	1-216-296-00	METAL CHIP	0	5%	1/8W
J6	1-216-296-00	METAL CHIP	0	5%	1/8W
J7	1-216-296-00	METAL CHIP	0	5%	1/8W
J8	1-216-296-00	METAL CHIP	0	5%	1/8W
J9	1-216-296-00	METAL CHIP	0	5%	1/8W
J22	1-216-295-00	METAL CHIP	0	5%	1/10W
		< RESISTOR >			
R108	1-208-510-61	RES,CHIP	10K	2%	1/8W
R109	1-208-518-61	RES,CHIP	22K	2%	1/10W
R110	1-208-462-61	RES,CHIP	10K	2%	1/10W
R111	1-216-671-11	METAL CHIP	6.8K	0.5%	1/10W
R112	1-208-462-61	RES,CHIP	10K	2%	1/10W
R113	1-208-453-61	RES,CHIP	4.7K	2%	1/10W
R114	1-208-453-61	RES,CHIP	4.7K	2%	1/10W
R115	1-208-534-61	RES,CHIP	100K	2%	1/10W
R116	1-208-534-61	RES,CHIP	100K	2%	1/10W
R117	1-208-534-61	RES,CHIP	100K	2%	1/10W
R132	1-208-462-61	RES,CHIP	10K	2%	1/10W
R133	1-216-178-00	RES,CHIP	150	2%	1/8W
R208	1-208-462-61	RES,CHIP	10K	2%	1/10W
R209	1-208-518-61	RES,CHIP	22K	2%	1/10W
R210	1-208-462-61	RES,CHIP	10K	2%	1/10W
R211	1-216-671-11	METAL CHIP	6.8K	0.5%	1/10W
R212	1-208-462-61	RES,CHIP	10K	2%	1/10W
R213	1-208-453-61	RES,CHIP	4.7K	2%	1/10W
R214	1-208-453-61	RES,CHIP	4.7K	2%	1/10W
R215	1-208-534-61	RES,CHIP	100K	2%	1/10W
R216	1-208-534-61	RES,CHIP	100K	2%	1/10W
R217	1-208-534-61	RES,CHIP	100K	2%	1/10W
R232	1-208-462-61	RES,CHIP	10K	2%	1/10W
R233	1-216-631-11	METAL CHIP	150	0.5%	1/10W
		< SWITCH >			
S101	1-572-185-11	SWITCH, SLIDE (FILTER)			
S102	1-692-721-11	SWITCH, SLIDE (DIRECT)			
		< VARIABLE RESISTOR >			
VR101	1-225-647-11	RES, VAR	20KX4 (FILTER)		
VR107	1-225-648-11	RES, VAR	5KX2 (LEVEL)		

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Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS	
		**********	
61	1-790-765-11	CABLE, PARALLEL (5P)	
64	1-790-764-11	CABLE, PARALLEL (4P)	
F901	1-532-947-11	FUSE (BLADE TYPE) (AUTO FUSE) (30A)	

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		ACCESSORIES & PACKING MATERIALS	
		**********	
	3-013-264-01	COVER, 3P TERMINAL TABLE	
	3-367-410-01	SCREW (DIA. 5X15), TAPPING	
	3-866-146-11	MANUAL, INSTRUCTION (ENGLISH,FRENCH)	
	3-866-146-21	MANUAL, INSTRUCTION (GERMAN,ITALIAN)	(AEP,UK,E)
	3-866-146-31	MANUAL, INSTRUCTION (SPANISH,PORTUGUESE)	(AEP,UK,E)
	3-866-146-41	MANUAL, INSTRUCTION (DUTCH,SWEDISH)	(AEP,UK,E)
	3-866-146-51	MANUAL, INSTRUCTION (RUSSIAN)	(AEP,UK,E)

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		**********	
		HARDWARE LIST	
		**********	
#1	7-685-546-19	SCREW +BTP 3X8 TYPE2 N-S	
#2	7-685-543-21	SCREW +BTP 3X4 TYPE2	
#3	7-685-544-11	SCREW +BTP 3X5 TYPE2 N-S	
#4	7-685-548-19	SCREW +BTP 3X12 TYPE2 N-S	
#5	7-685-648-79	SCREW +BVTP 3X12 TYPE2 IT-3	
#6	7-682-949-01	SCREW +PSW 3X10	
#7	7-682-948-01	SCREW +PSW 3X8	
#8	7-685-146-01	SCREW +P 3X8 TYPE1	
#9	7-682-648-09	SCREW +PS 3X8	
#10	7-685-790-09	SCREW +PTT 2.6X4 (S)	
#11	7-621-775-20	+B 2.6X5	
#12	7-685-103-19	SCREW +P 2X5 TYPE2 SLIT	
#13	7-685-783-09	SCREW +PTT 2X6 (S)	

9-926-420-11

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Personal & Mobile Communication Company

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